

West Seattle and Ballard Link Extensions

*Mercer Corridor
Stakeholders
7/20/2023*

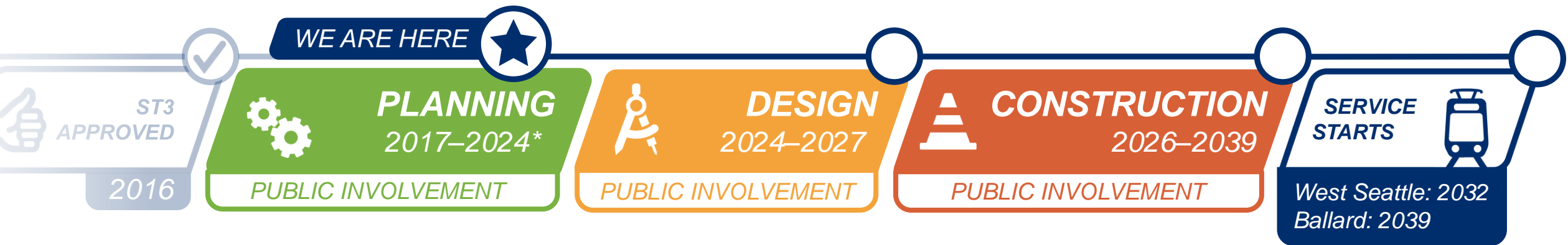


Agenda

- ***West Seattle and Ballard Link Extensions (WSBLE)***
- Ballard Link Extension – Denny and South Lake Union Stations
- Results for ridership, access, equity and large events
- Next steps
- Q&A

West Seattle and Ballard Link Extensions

Project timeline



West Seattle and Ballard Link Extensions

What we're studying in this phase

-  Preferred alternatives
-  Other EIS alternatives



Environmental process next steps

- West Seattle and Ballard Link Extensions Draft EIS was published in January 2022
- Both extensions were initially on the same environmental review timeline
- Additional environmental review needed for project refinements for Ballard Link Extension resulting from Board action in March 2023
- Environmental review for the two extensions will now proceed on different timelines
 - West Seattle Link Extension will proceed to a Final EIS
 - Ballard Link Extension will require a SEPA Supplemental Draft EIS/NEPA Draft EIS
(incorporating all work to date including previous comments, public outreach and environmental analysis)

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- West Seattle and Ballard Link Extensions (WSBLE)
- ***Ballard Link Extension – Denny and South Lake Union Stations***
- Results for ridership, access, equity and large events
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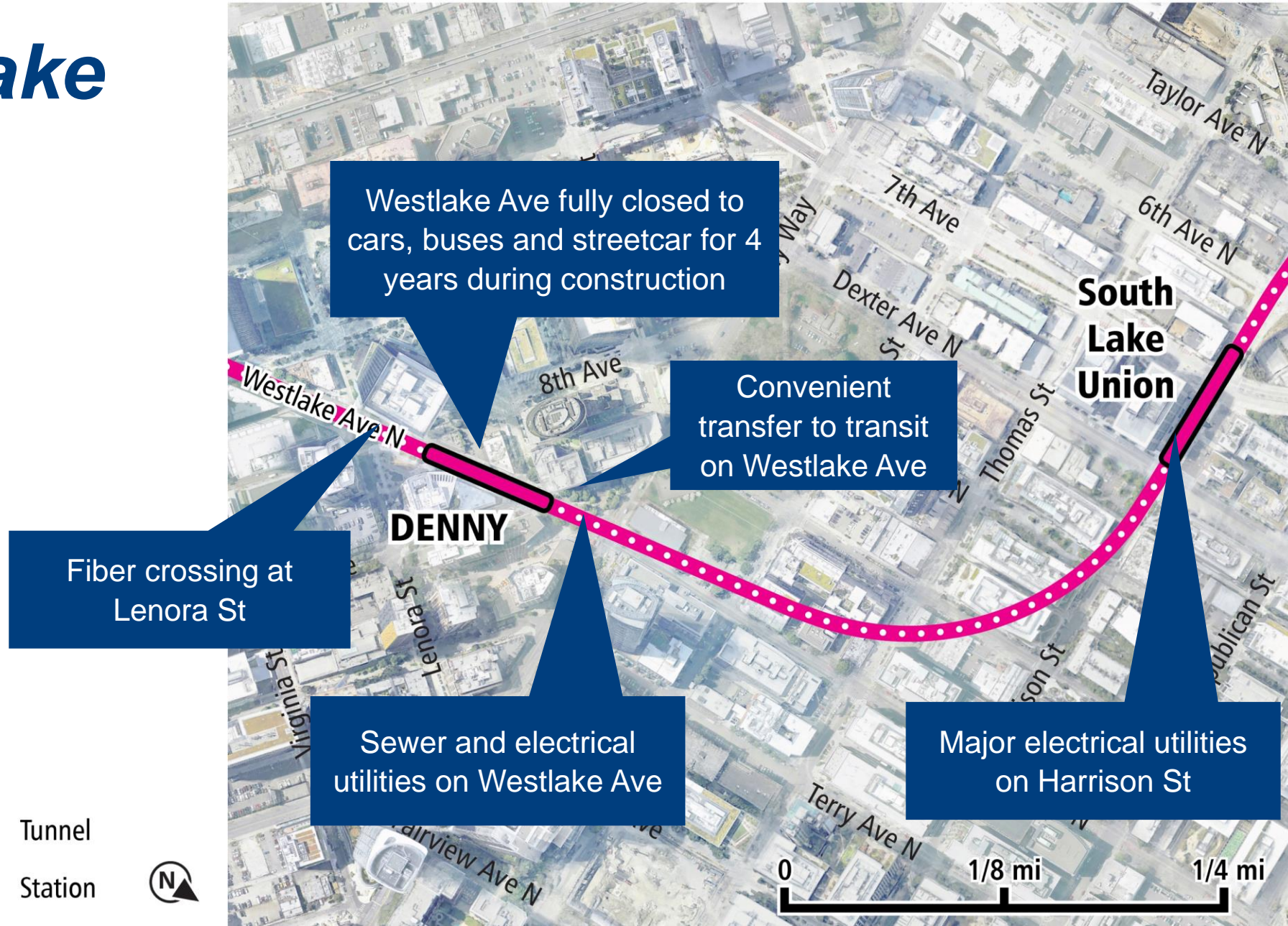
March Board action

Motion No. M2023-18

While the previously-identified preferred alternative is not modified at this time, staff is directed to **carry forward both the Denny Station on Westlake** (DT1) Draft EIS Station alternative **and Denny Station on Terry** (i.e. South Lake Union Mix and Match) alternative as part of ongoing environmental review. Staff is directed to continue collaboration with City of Seattle and community partners to **further clarify the technical, financial, schedule and risk implications of both alternatives** and return to the Board with a **status report by May 25, 2023.**

Denny Westlake

Draft EIS DT-1



Denny Terry SLU Mix-Match

\$340m additional cost

Uncertainty of fiber relocation could delay overall schedule

Substantial disruption and litigation risk if inadvertently cut fiber lines

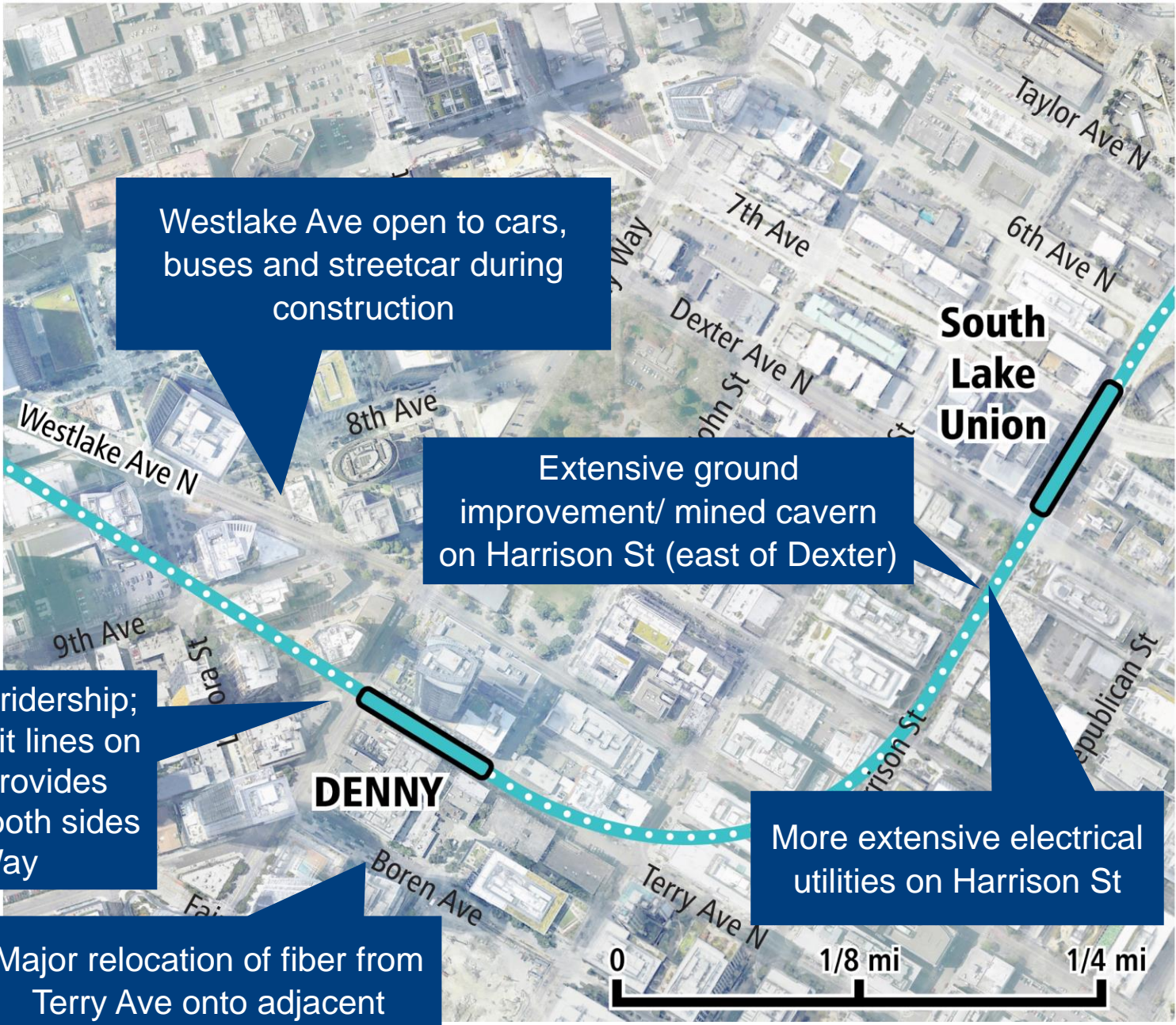
Minimal impact to ridership; short walk to transit lines on Westlake Ave; provides station access to both sides of Denny Way

Major relocation of fiber from Terry Ave onto adjacent streets (Boren, Denny)

Westlake Ave open to cars, buses and streetcar during construction

Extensive ground improvement/ mined cavern on Harrison St (east of Dexter)

More extensive electrical utilities on Harrison St



Denny Westlake Shifted North

\$170m additional cost*

Phased in-street construction to maintain traffic adds construction complexity and extends duration of street effects (8 years vs 4 years)

Avoids fiber crossing at Lenora St

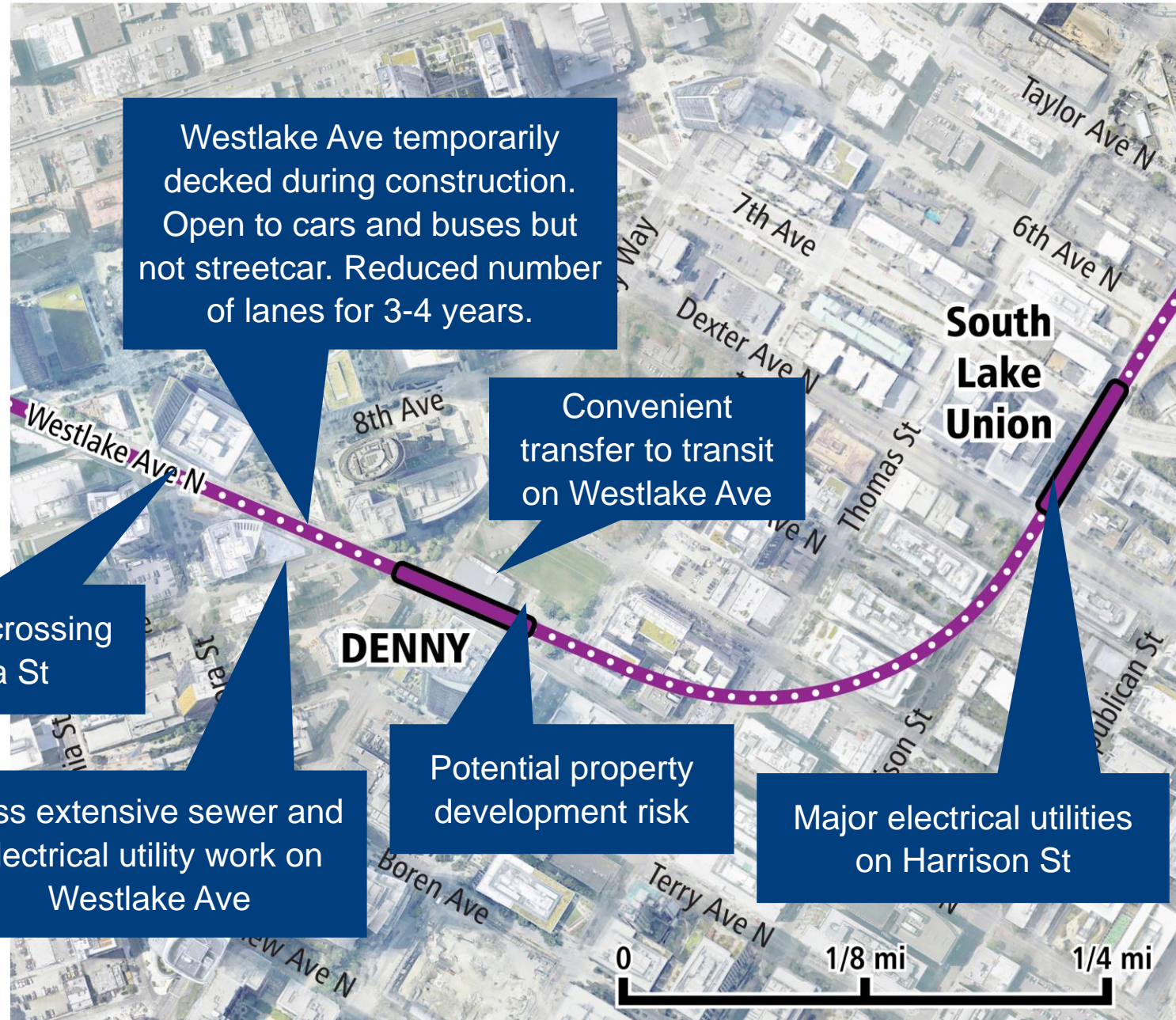
Less extensive sewer and electrical utility work on Westlake Ave

Westlake Ave temporarily decked during construction. Open to cars and buses but not streetcar. Reduced number of lanes for 3-4 years.

Convenient transfer to transit on Westlake Ave

Potential property development risk

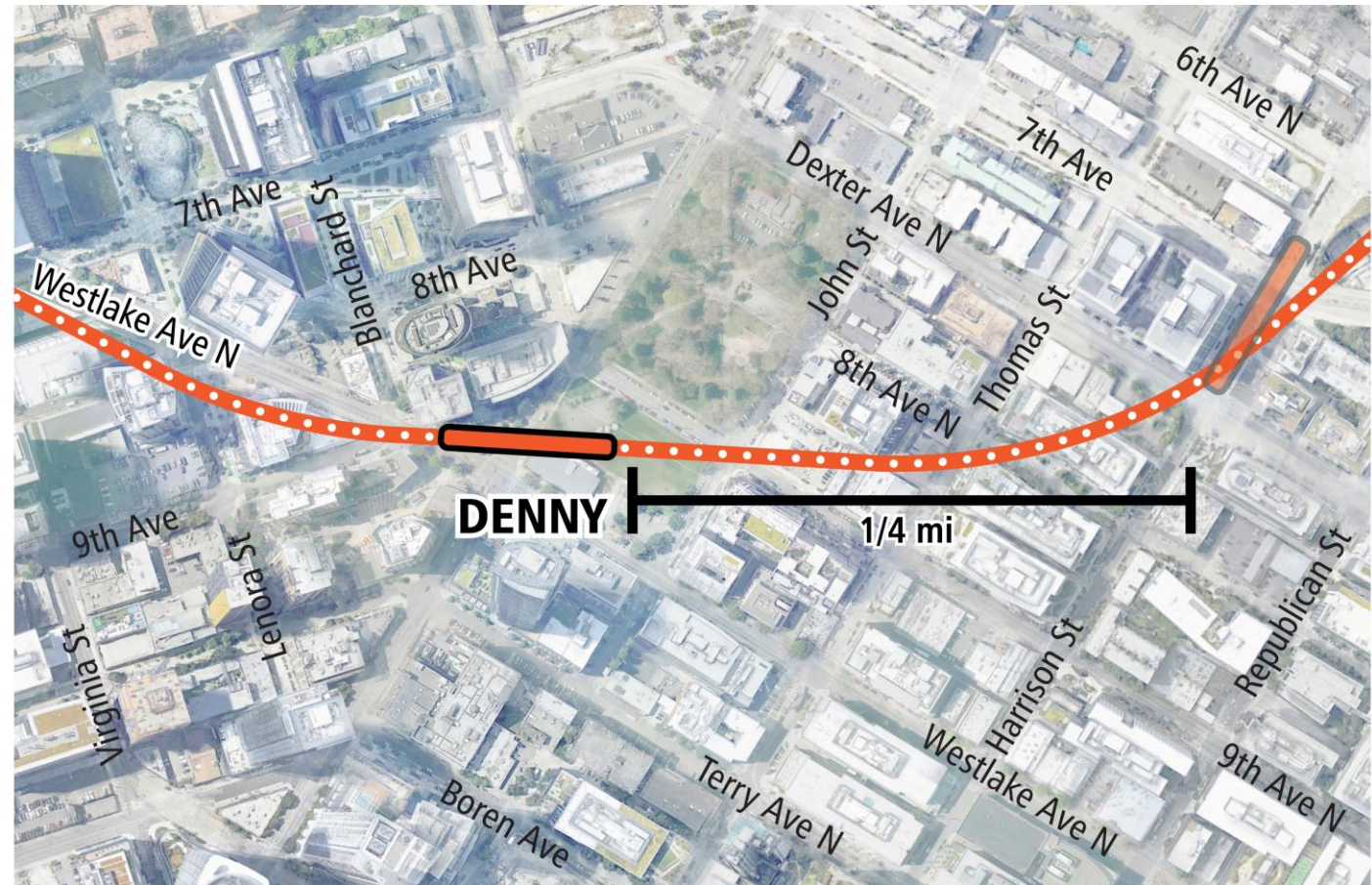
Major electrical utilities on Harrison St



Denny Westlake

Shifted West

- To further avoid impacts to Westlake Ave, shifted station west out of street right of way onto private property
- Resulted in very close spacing to Harrison St station with geometric and technical constraints
- Hence, considered consolidated station concept instead of two closely spaced stations



—•••— Tunnel

— Station



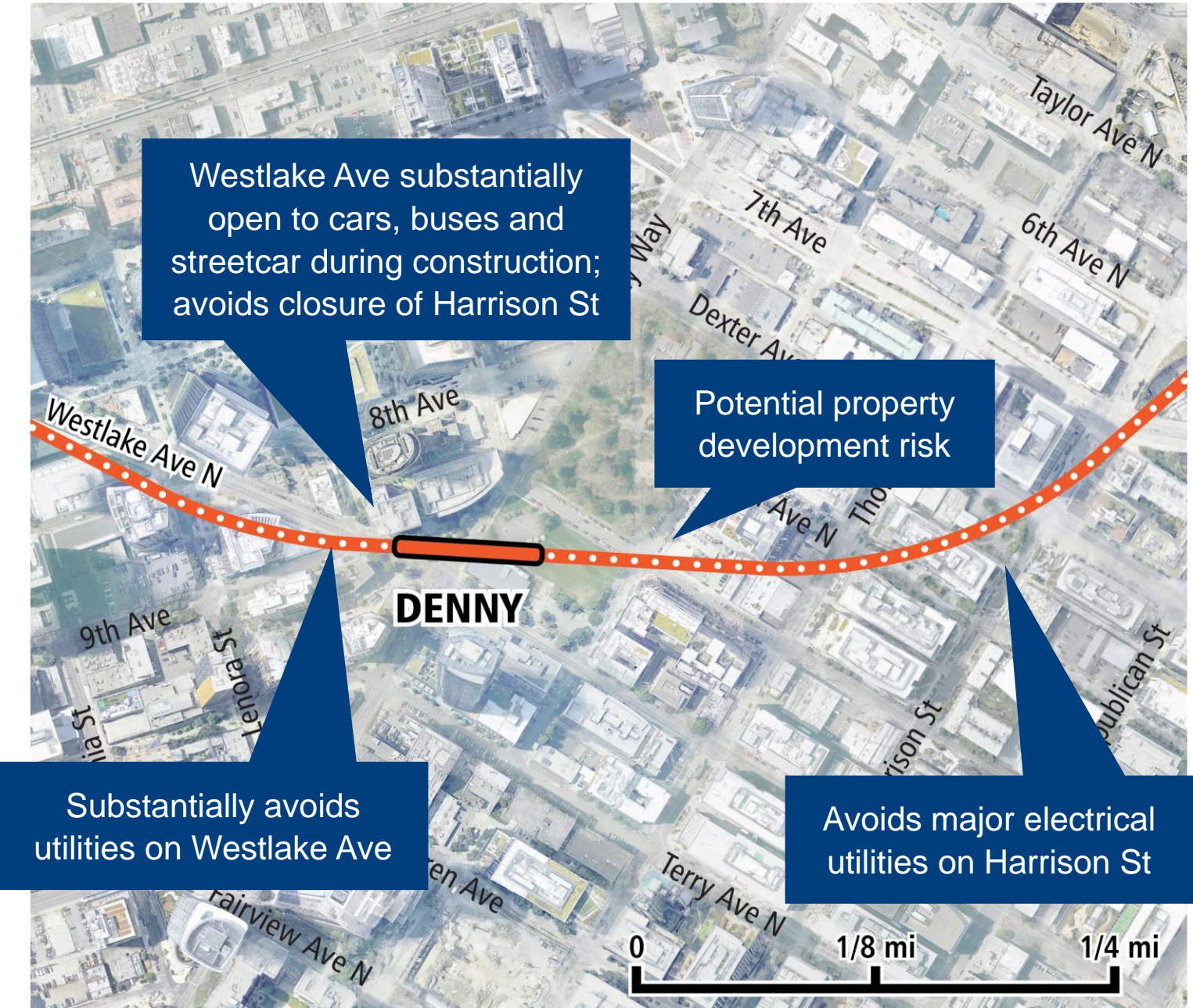
Denny Westlake

Shifted West

\$440m cost savings due to consolidation of Denny and Harrison St stations*

Potentially shorter station construction duration due to improved site access and mostly off-street construction

Ridership, transit integration and passenger experience implications of consolidated station to be further assessed





Denny Westlake

Denny Terry

Denny Westlake refinement options

	Draft EIS (DT-1)	SLU Mix-Match	Shifted North	Shifted West
Technical <i>street closures</i>	Westlake Ave fully closed to cars, buses and streetcar for 4 years during construction	Westlake Ave open to cars, buses and streetcar during construction	Westlake Ave temporarily decked during construction. Open to cars and buses but not streetcar. Reduced number of lanes for 3-4 years.	Westlake Ave substantially open to cars, buses and streetcar during construction; avoids closure of Harrison St
<i>utilities</i>	Sewer and electrical utilities on Westlake Ave; fiber crossing at Lenora St; major electrical utilities on Harrison St	Major relocation of fiber from Terry Ave onto adjacent streets (Boren, Denny); more extensive electrical utilities on Harrison St	Less extensive sewer and electrical utility work on Westlake Ave; avoids fiber crossing at Lenora St; major electrical utilities on Harrison St	Substantially avoids utilities on Westlake Ave and completely avoids major electrical utilities on Harrison St
<i>constructability</i>	Base case for constructability comparison	Extensive ground improvement/mined cavern on Harrison St (east of Dexter)	Phased in-street construction to maintain traffic adds construction complexity and extends duration of street effects (8 years vs 4 years)	Potentially shorter station construction duration due to improved site access and mostly off-street construction
Performance <i>ridership, transit integration, passenger experience</i>	Convenient transfer to transit on Westlake Ave	Minimal impact to ridership; short walk to transit lines on Westlake Ave; provides station access to both sides of Denny Way	Convenient transfer to transit on Westlake Ave	<i>To be assessed</i>
Cost <i>compared to Denny Westlake Draft EIS DT-1</i>	Base case for cost comparison	\$340m additional cost	\$170m additional cost*	\$440m cost savings due to consolidation of Denny and Harrison St stations*
Schedule <i>overall project delay</i>	Base case for schedule comparison	Uncertainty of fiber relocation could delay overall schedule	No delay to overall schedule	No delay to overall schedule
Risk <i>substantial cost, schedule, or feasibility risks</i>	Base case for risk comparison	Substantial disruption and litigation risk if inadvertently cut fiber lines	Potential property development risk	Potential property development risk; avoids major electrical utilities on Harrison St

Agenda

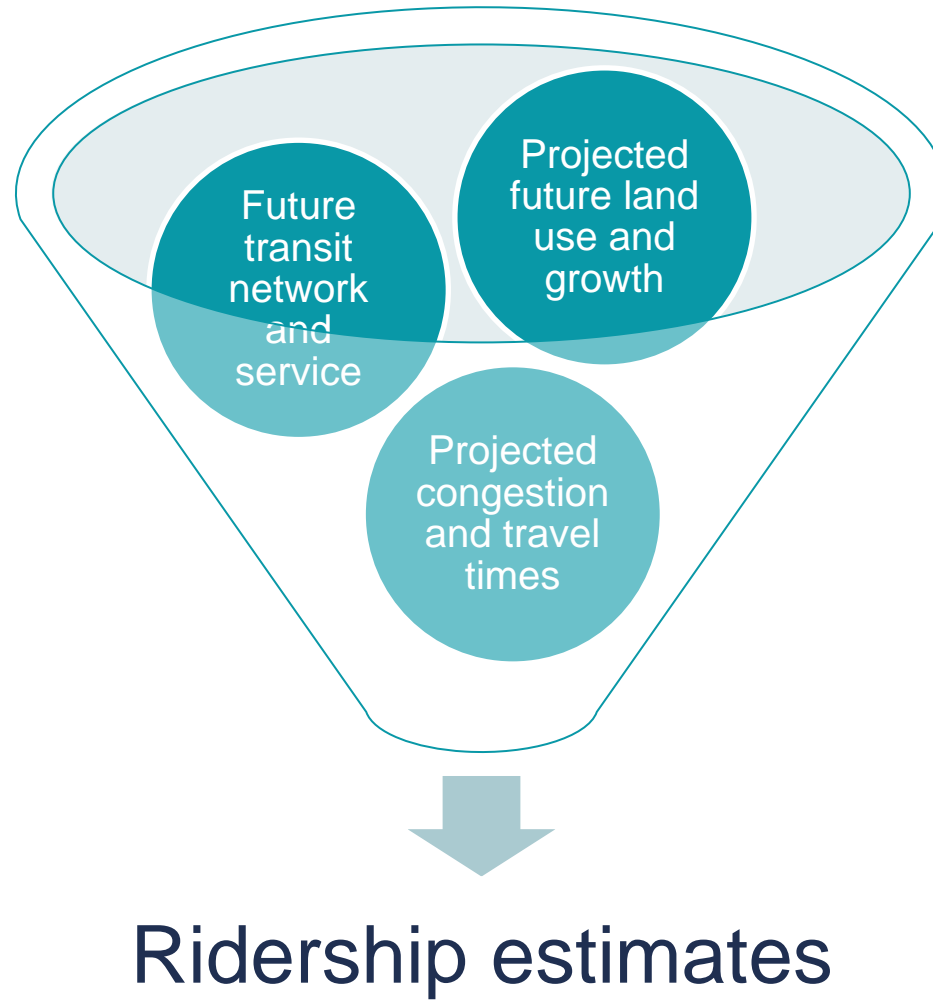
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Ridership Modelling

- **Ridership modelling provides potential scale and magnitude of system and station usage**
- **Modelling does not predict individual behavior (e.g., people choose the travel choice that makes sense for them based on many different factors)**

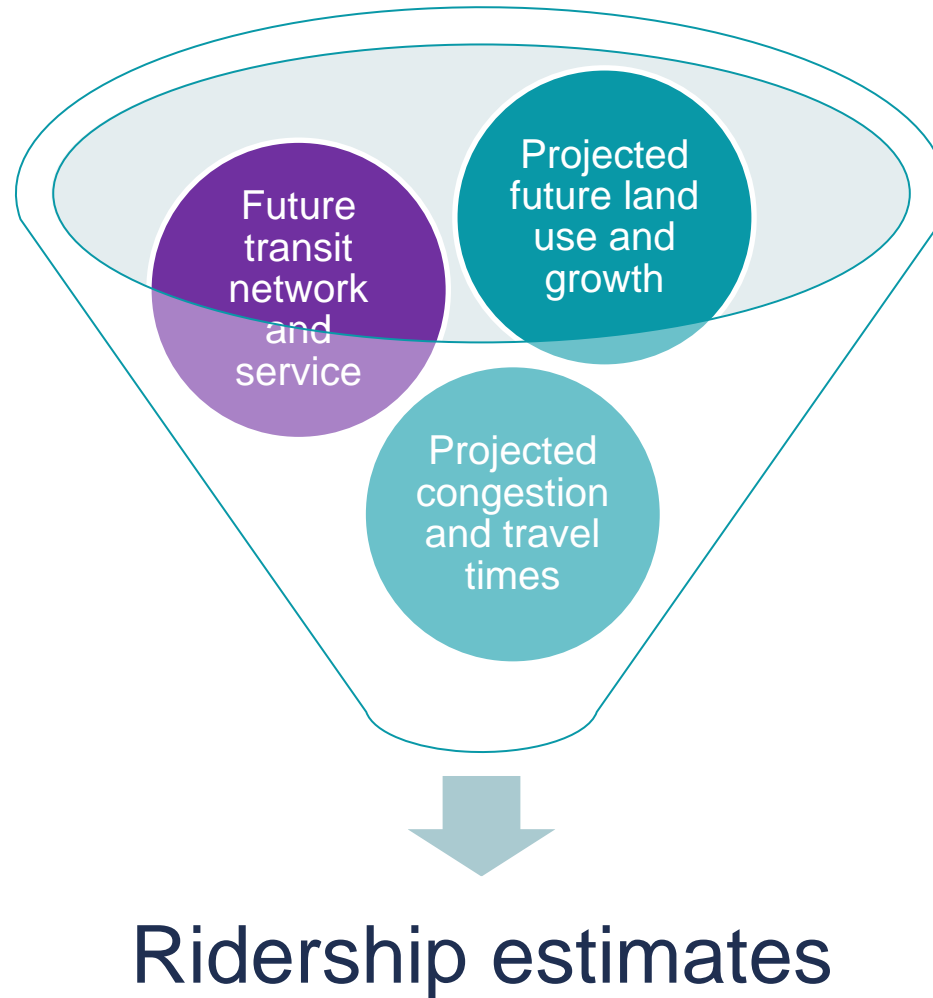
Ridership Modelling

Key model inputs:



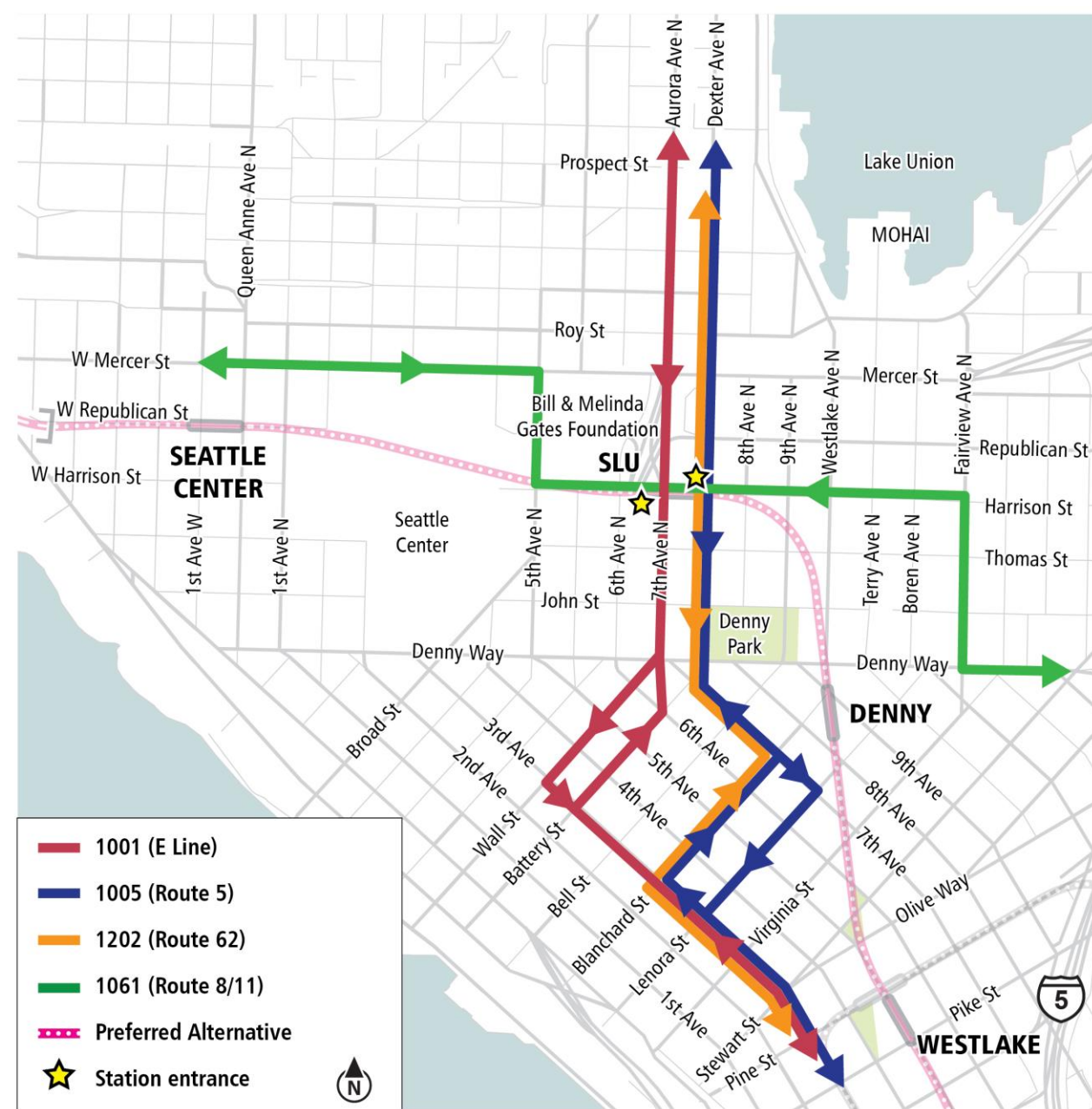
Ridership Modelling

Key model inputs:



Transit Integration: Draft EIS

- 80% of all bus-rail transfers at SLU are related to four routes:
 - 1001 (E Line)
 - 1005 (similar to Route 5) Downtown-Fremont-Greenwood
 - 1202 (similar to Route 62) Downtown-Wallingford-Sand Pt
 - 1061 (similar to Route 8/11) Interbay-Capitol Hill-Madison Park
- Bus-rail transfers are about 32% of total boardings at South Lake Union Station; 12% at Denny Station

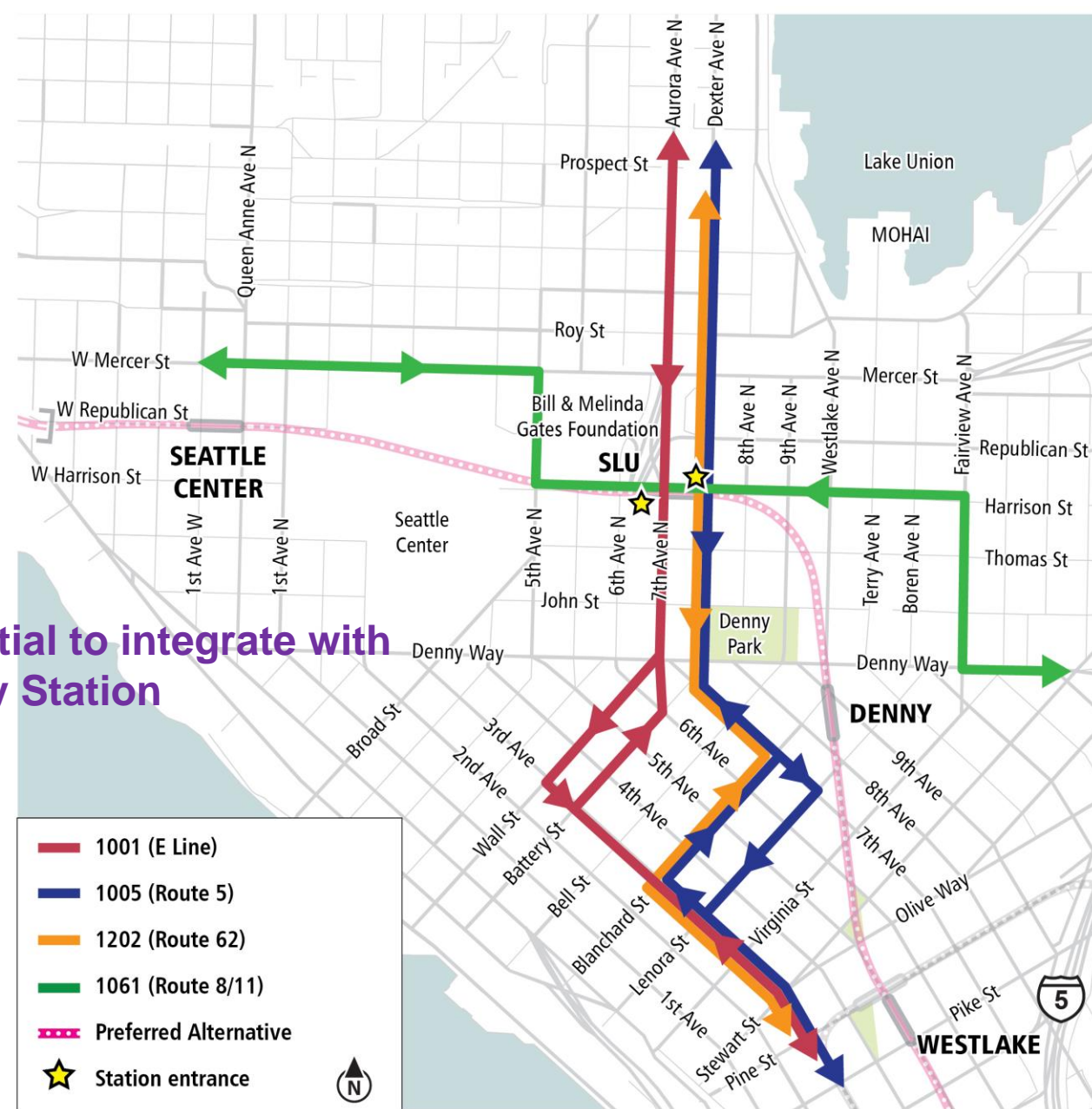


Transit Integration: Draft EIS

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- Bus-rail transfers are about 32% of total boardings at South Lake Union Station; 12% at Denny Station

*Would require dedicated bus lanes on Denny Way and improvements to adjacent network roads. Feasibility of dedicated bus lanes on Denny is highly uncertain at this time

Potential to integrate with Denny Station

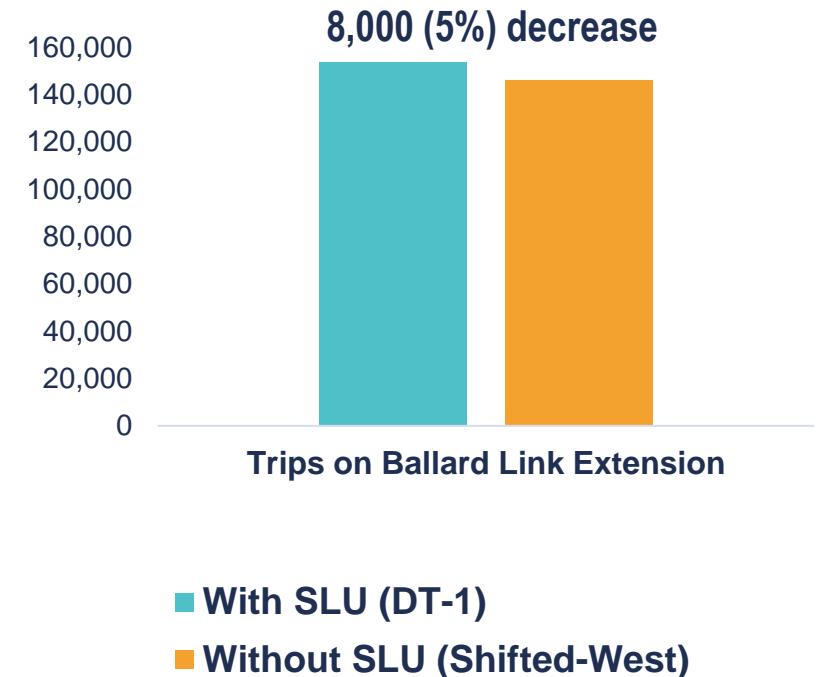


Ridership modeling results

What would happen if the Denny and SLU stations were consolidated...

Overall transit ridership would remain steady¹ but fewer people would choose to ride Link. Riders would instead choose to ride the bus or would stay on the bus and not transfer to Link.

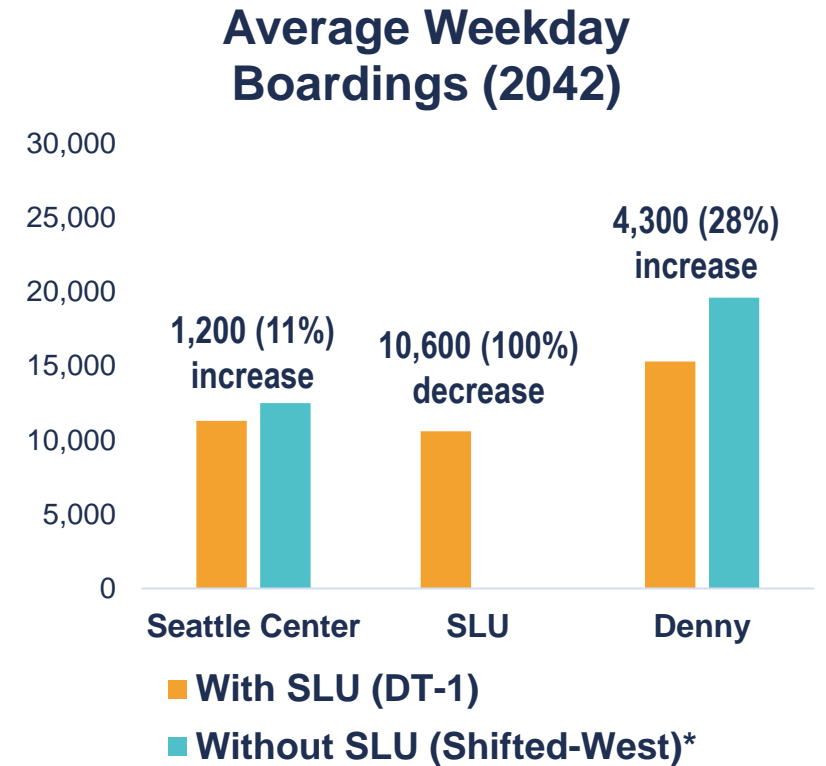
Average Weekday (2042)



Ridership modeling results

How do travel patterns shift in SLU area...

Approximately half of projected boardings expected at SLU Station shift to Seattle Center and Denny Stations in Shifted West Scenario. Remaining boardings mostly shift to bus. Overall boardings on Link drop by ~10k.

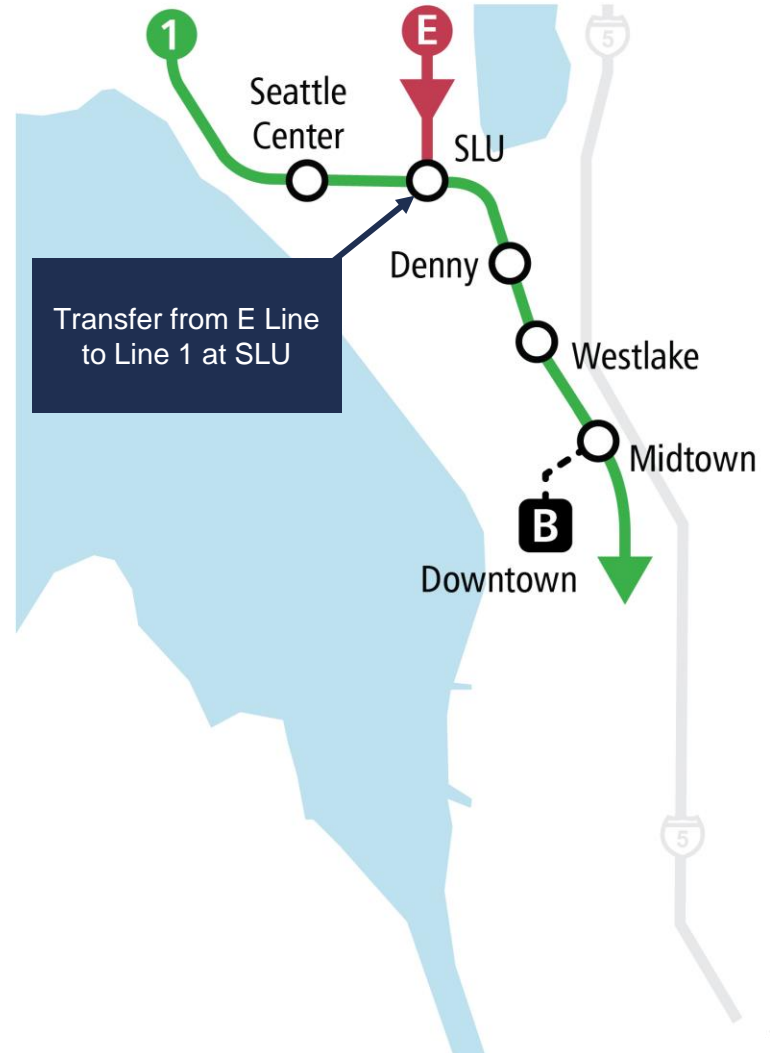


Ridership modeling results

How trips could change...

Someone who rides the E Line from the north into downtown might have transferred to Link at SLU for the remainder of their trip but instead chooses to stay on the bus to access their destination

With SLU station



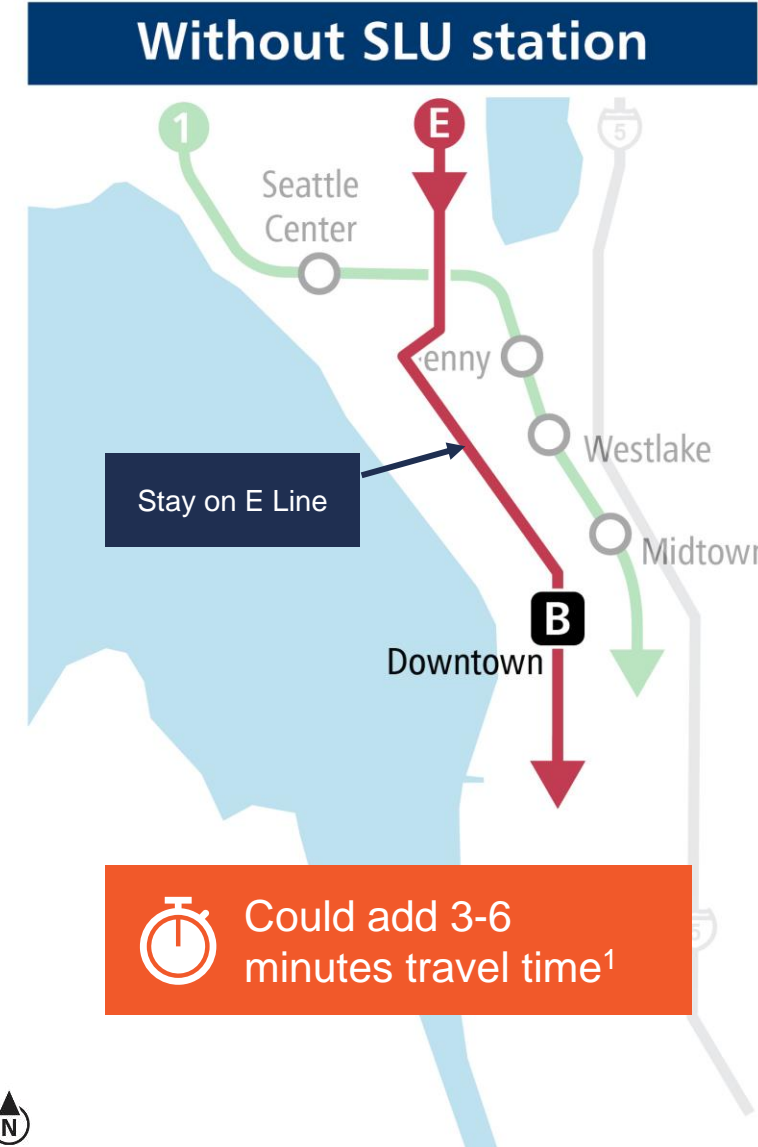
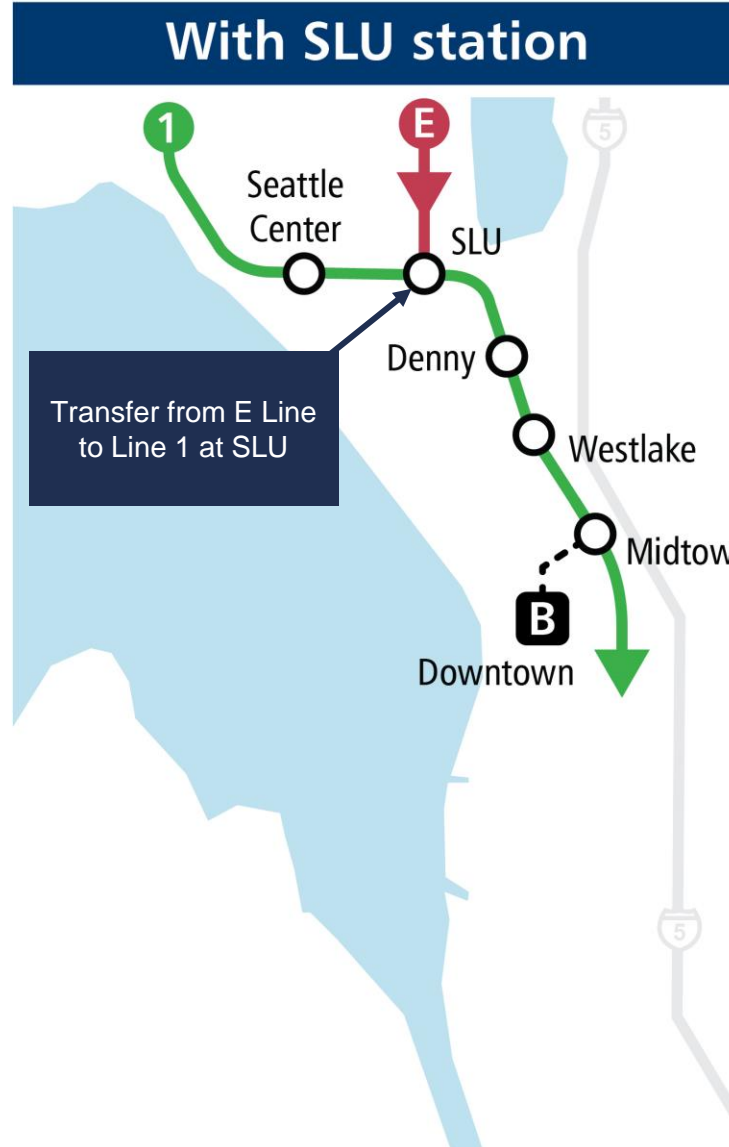
Without SLU station



Ridership modeling results

How trips could change...

Someone who rides the E Line from the north into downtown might have transferred to Link at SLU for the remainder of their trip but instead chooses to stay on the bus to access their destination



Ridership modeling results

How trips could change...

Someone at Dexter and Mercer who might have chosen Link to get to Westlake Center via a 3-minute walk to the SLU station instead chooses to ride the 62 bus

With SLU station



Without SLU station



Ridership modeling results

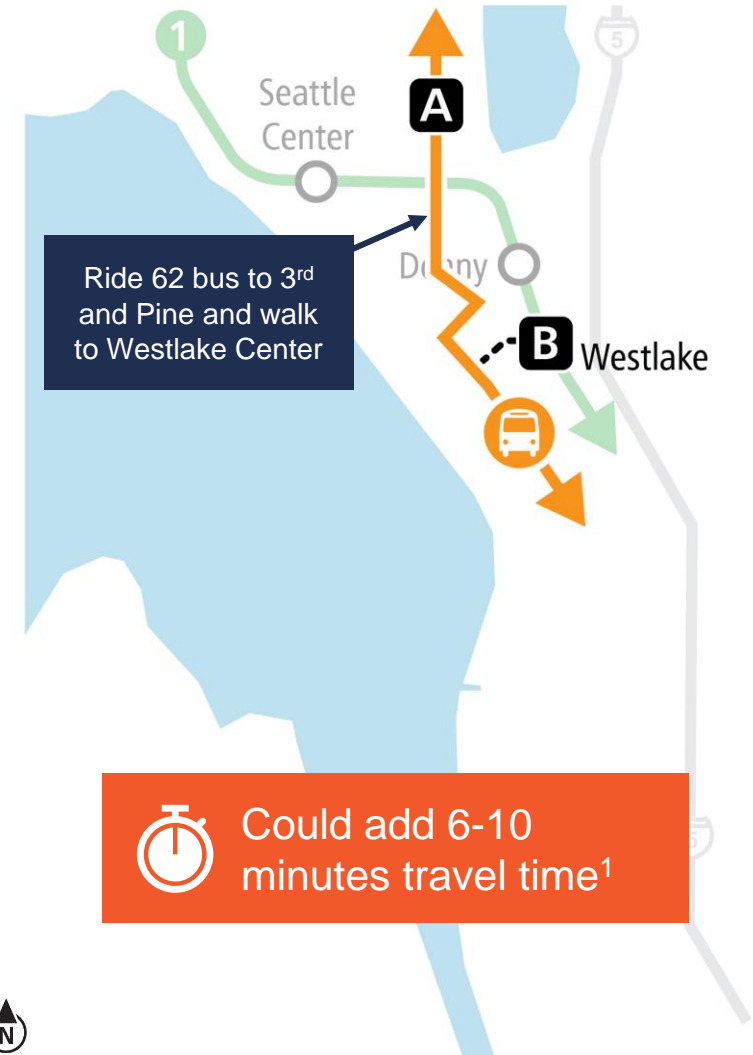
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With SLU station



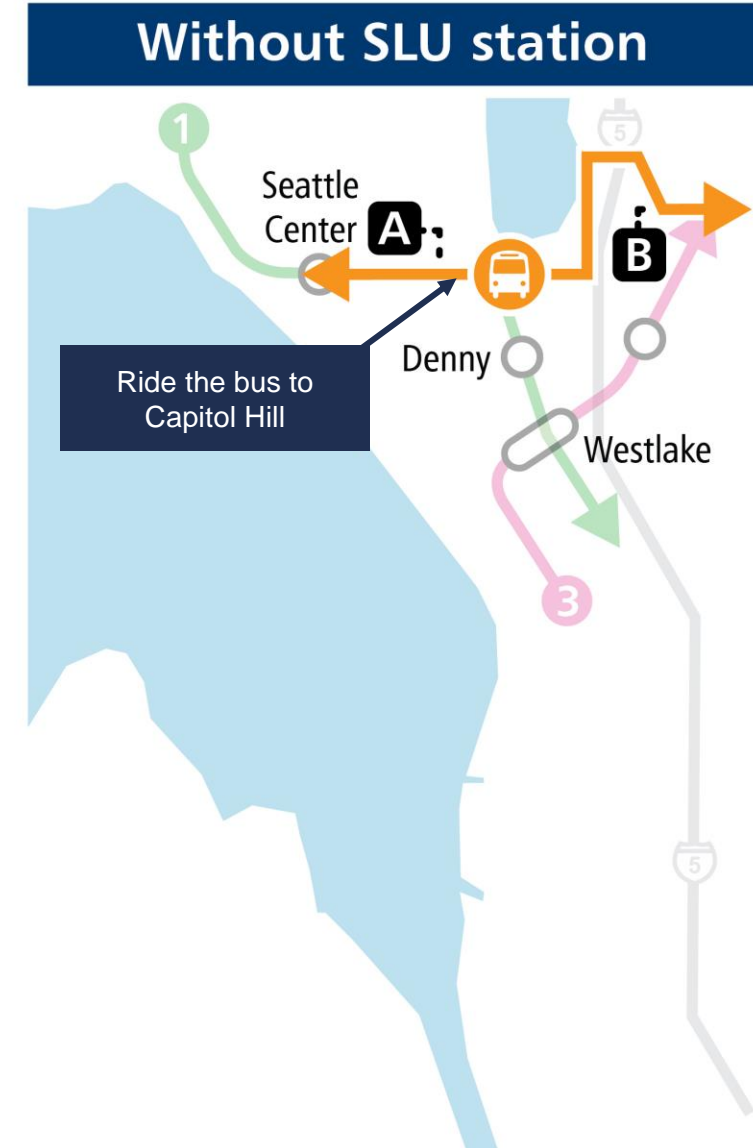
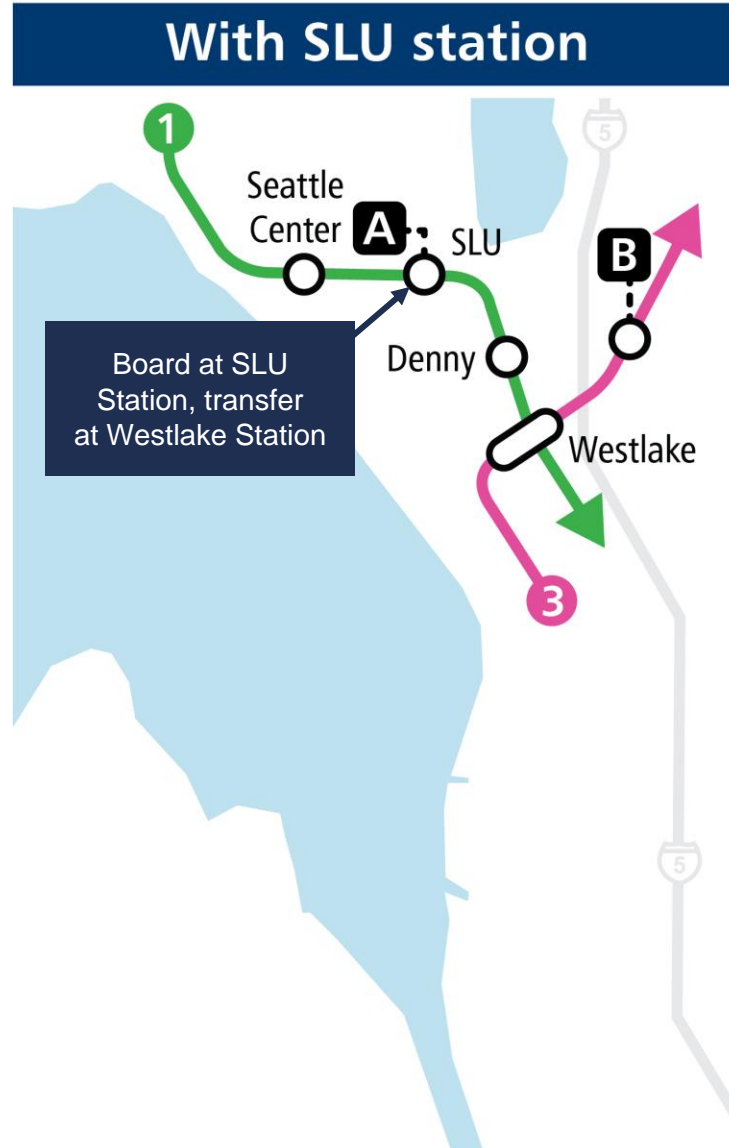
Without SLU station



Ridership modelling results

How trips could change...

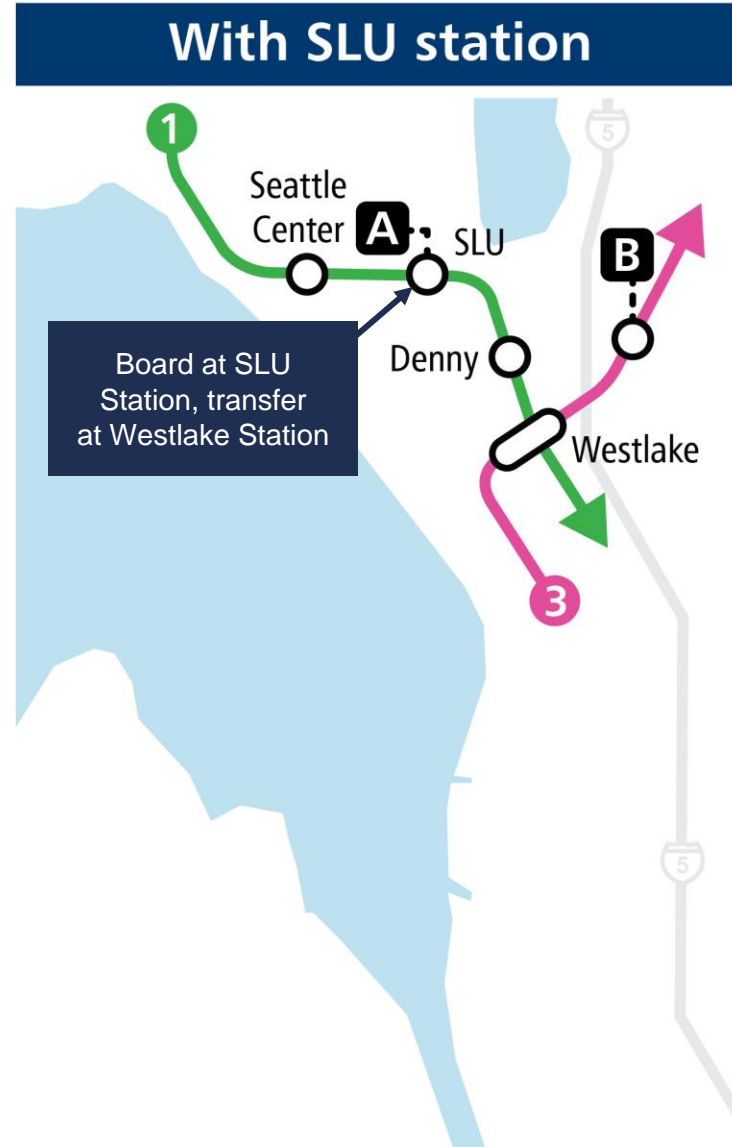
Someone at Dexter and Harrison going to Capitol Hill might have boarded Link at SLU station would instead METRO CONNECTS Route 3028/3104 to Capitol Hill



Ridership modelling results

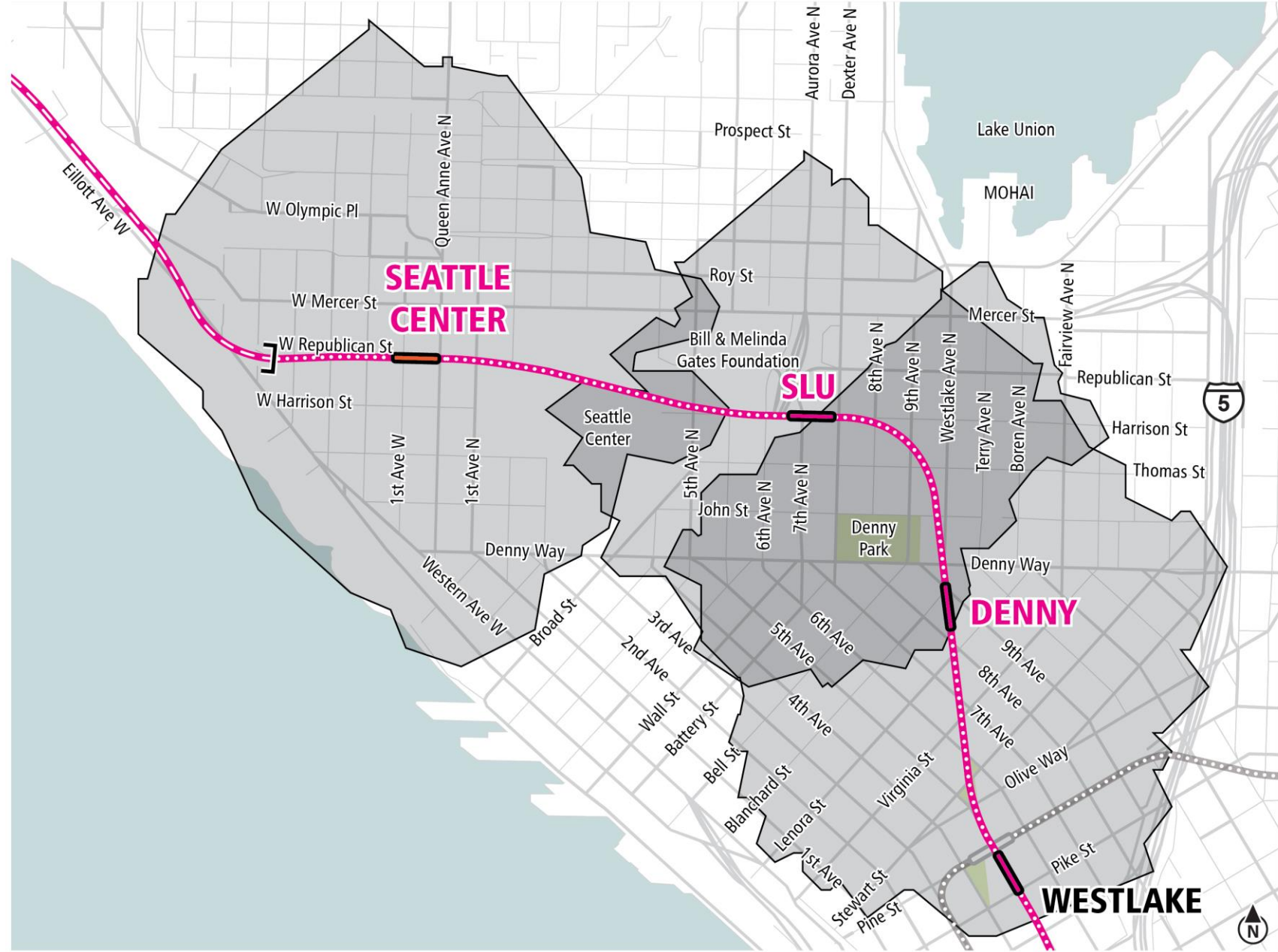
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Walk access

10-minute Walksheds* With SLU



10-minute Walksheds* Without SLU



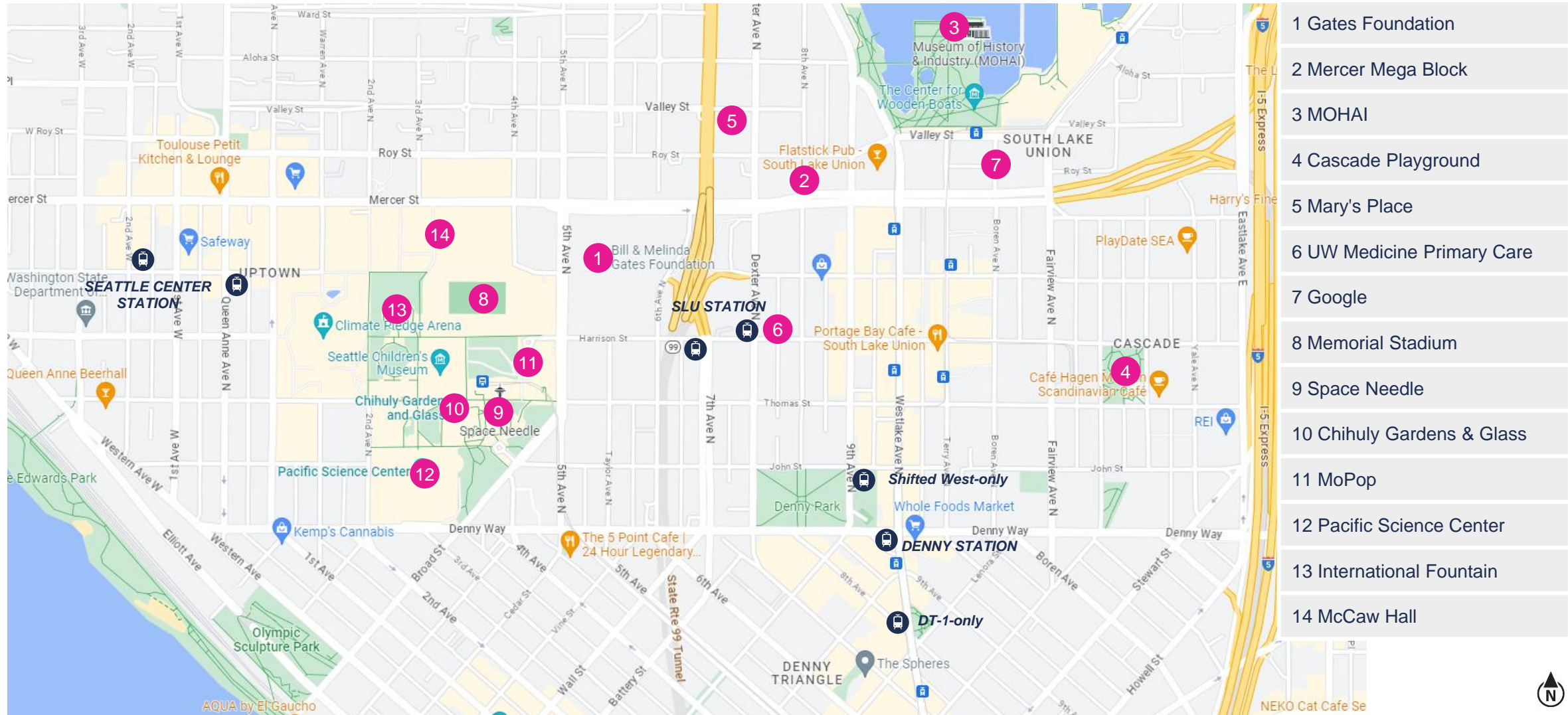
5+ min difference

Walk time to nearest 1-Line station*:

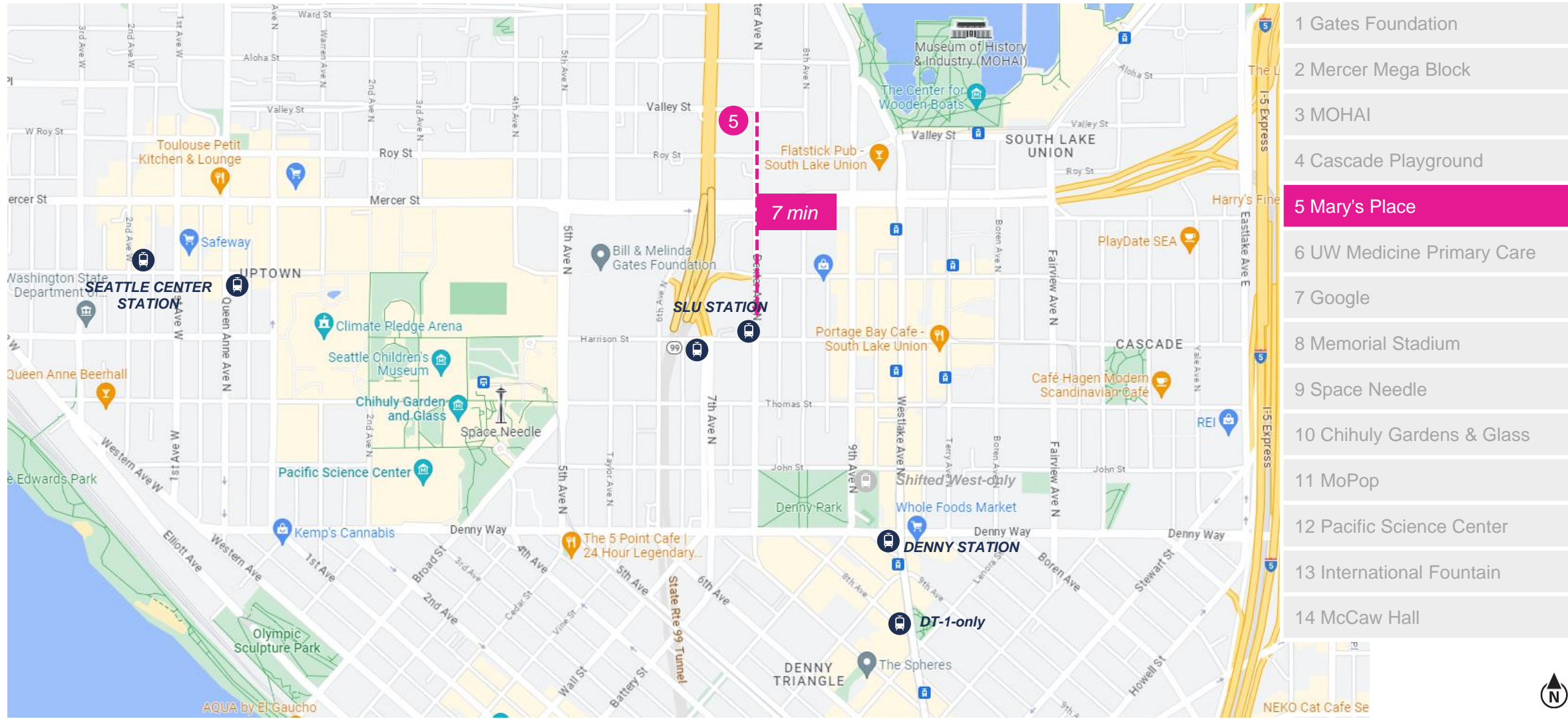
	With SLU	Without SLU	Notes
1 Gates Foundation	2 min	10 min	Walk to Denny (shifted west) instead of SLU. Would introduce additional arterial crossings for Gates Foundation (7th Ave and Dexter Ave) and Mary's Place (Dexter Ave).
2 Mercer Mega Block	6 min	12 min	
3 MOHAI	14 min	15 min	
4 Cascade Playground	10 min	10 min	
5 Mary's Place	7 min	12 min	
6 UW Medicine Primary Care	2 min	8 min	
7 Google	12 min	12 min	
8 Memorial Stadium	6 min	6 min	Walk to Seattle Center rather than either Seattle Center or SLU
9 Space Needle	7 min	10 min	Walk to Seattle Center rather than SLU. Walking to Seattle Center station would involve fewer arterial crossings.
10 Chihuly Gardens & Glass	8 min	10 min	
11 MoPop	4 min	10 min	Walk to Seattle Center in both scenarios
12 Pacific Science Center	10 min	10 min	
13 International Fountain	6 min	6 min	
14 McCaw Hall	6 min	6 min	

*Walk times are approximate based on an example walking route and do not account for all passengers' preferences

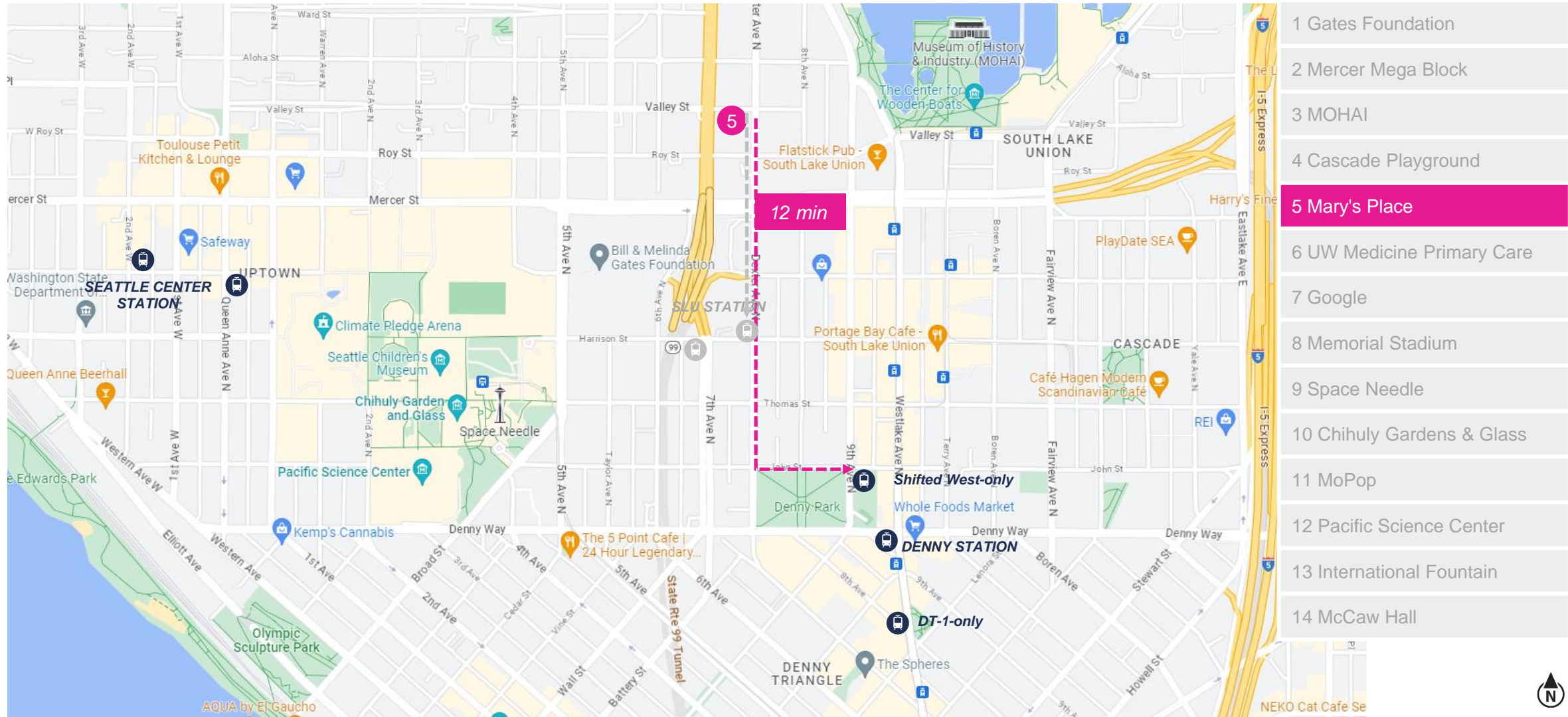
Walk Access



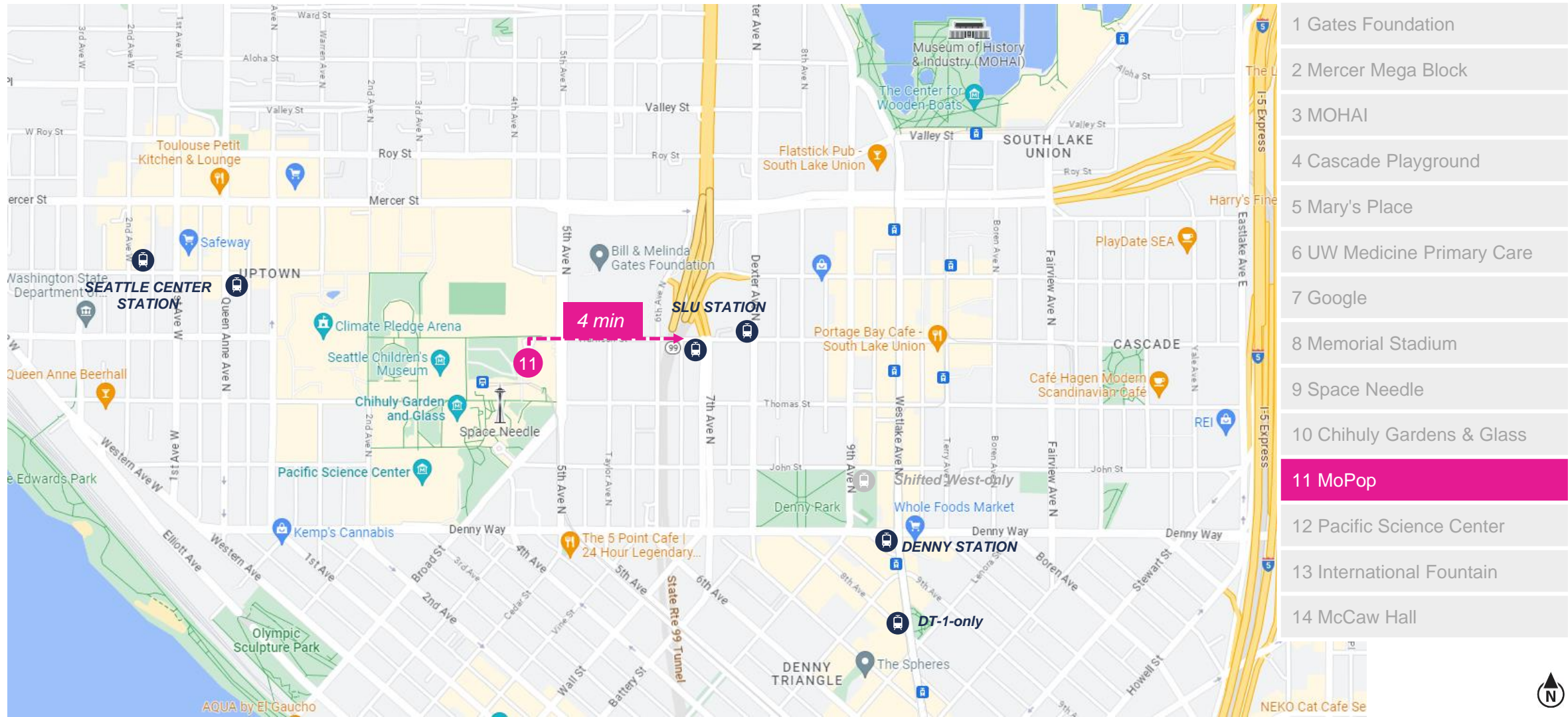
Walk Access – with SLU



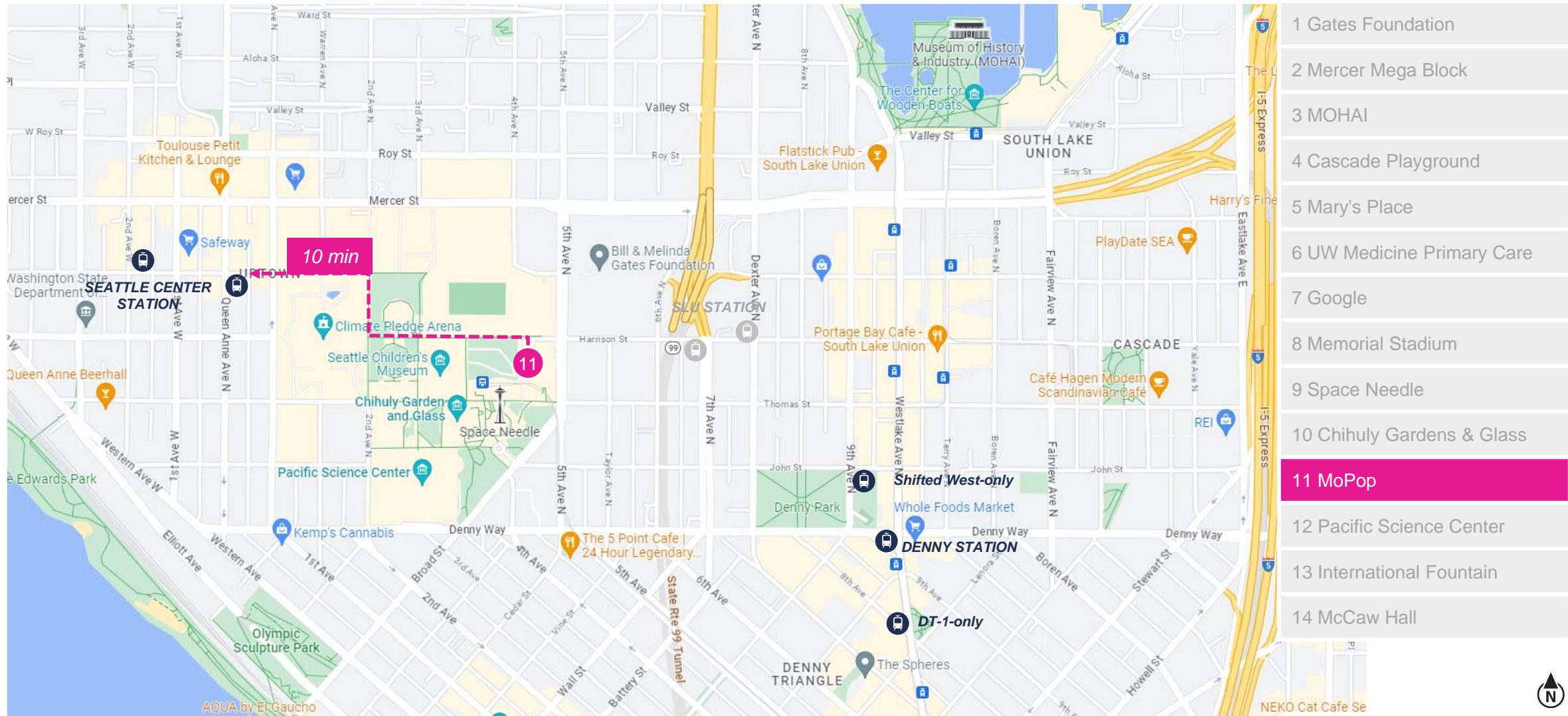
Walk Access – without SLU



Walk Access – with SLU



Walk Access – without SLU



Equity

Racial Equity Toolkit

Outcomes

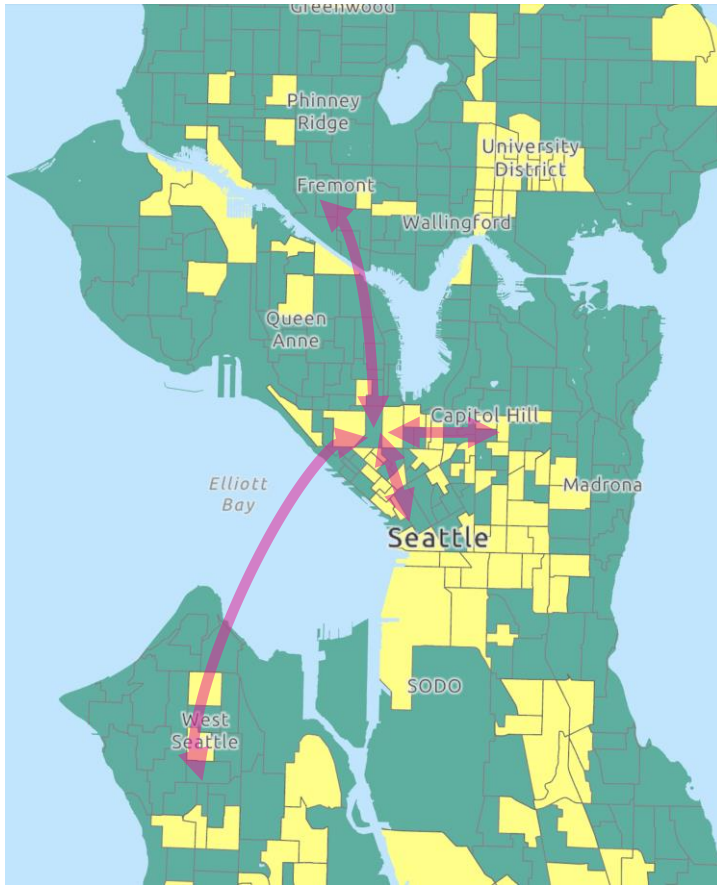
- Advance environmental and economic justice to improve economic and health outcomes for communities of color.
- Enhance mobility and access for communities of color and low-income populations;
- Create opportunities for equitable development that include expanding housing and community assets for communities of color;
- Avoid disproportionate impacts on communities of color and low-income populations;
- Create a sense of belonging for communities of color at all stations, making spaces where everyone sees themselves as belonging, feeling safe, and welcome; and
- Meaningfully involve communities of color and low-income populations in the project.

Racial Equity Toolkit

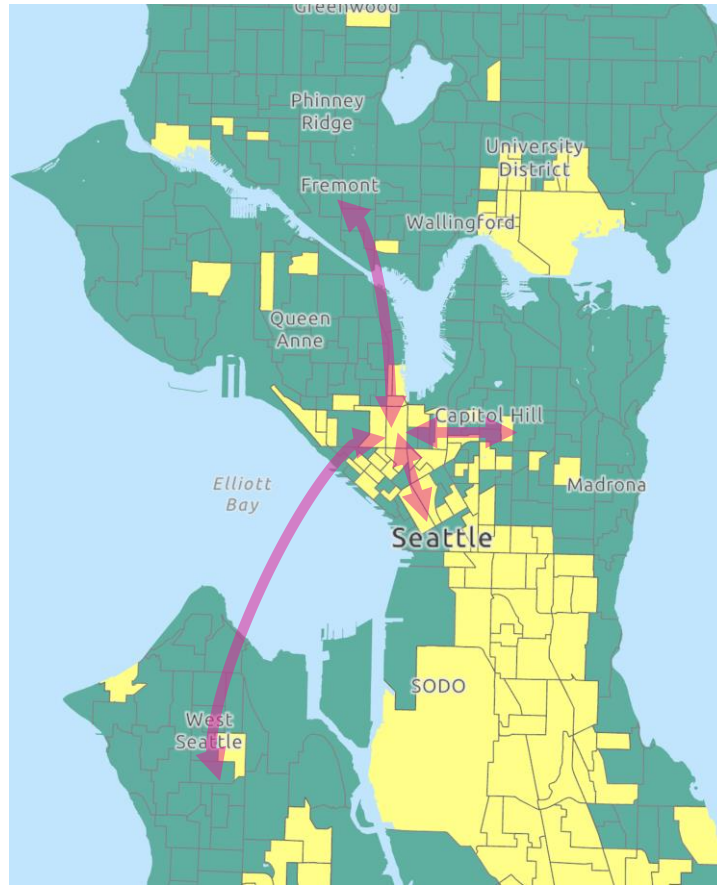
Outcomes

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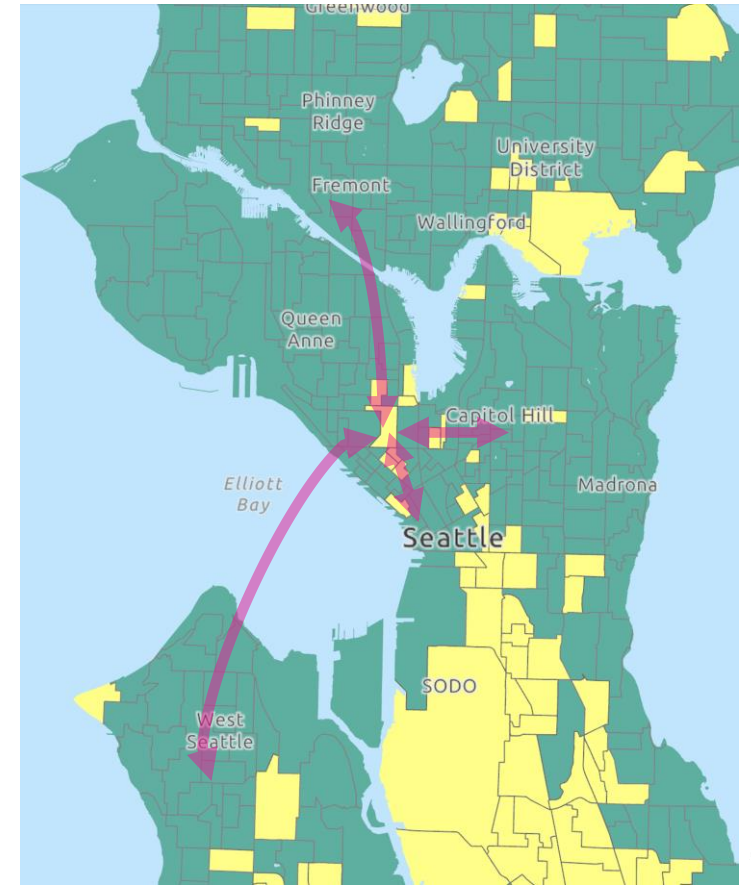
Equity



Low-Income



Communities of Color



Limited English Proficiency

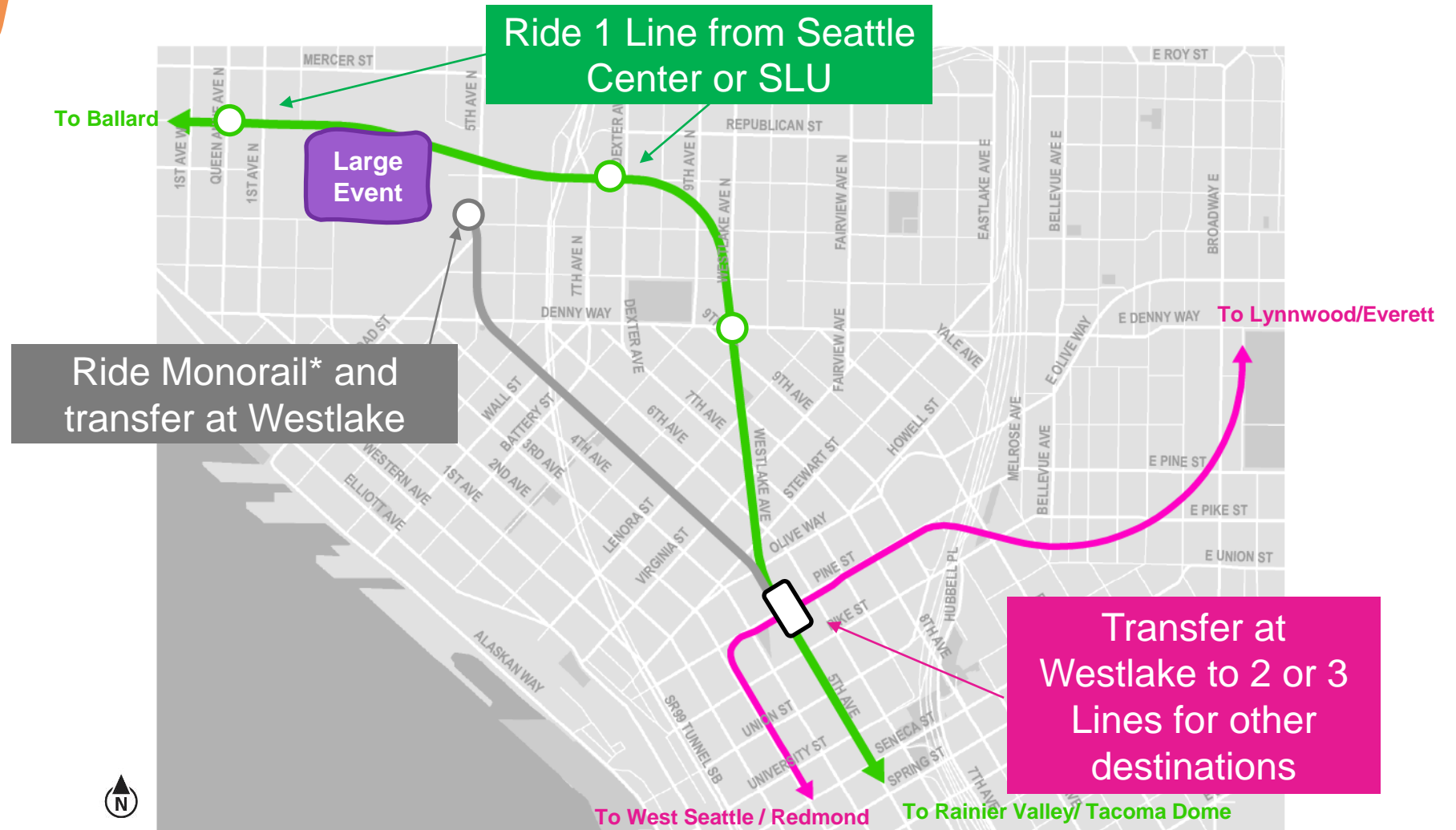
 At or Above Regional Average

 Below Regional Average

***Seattle Center
access/capacity***

Seattle Center/ Large Events

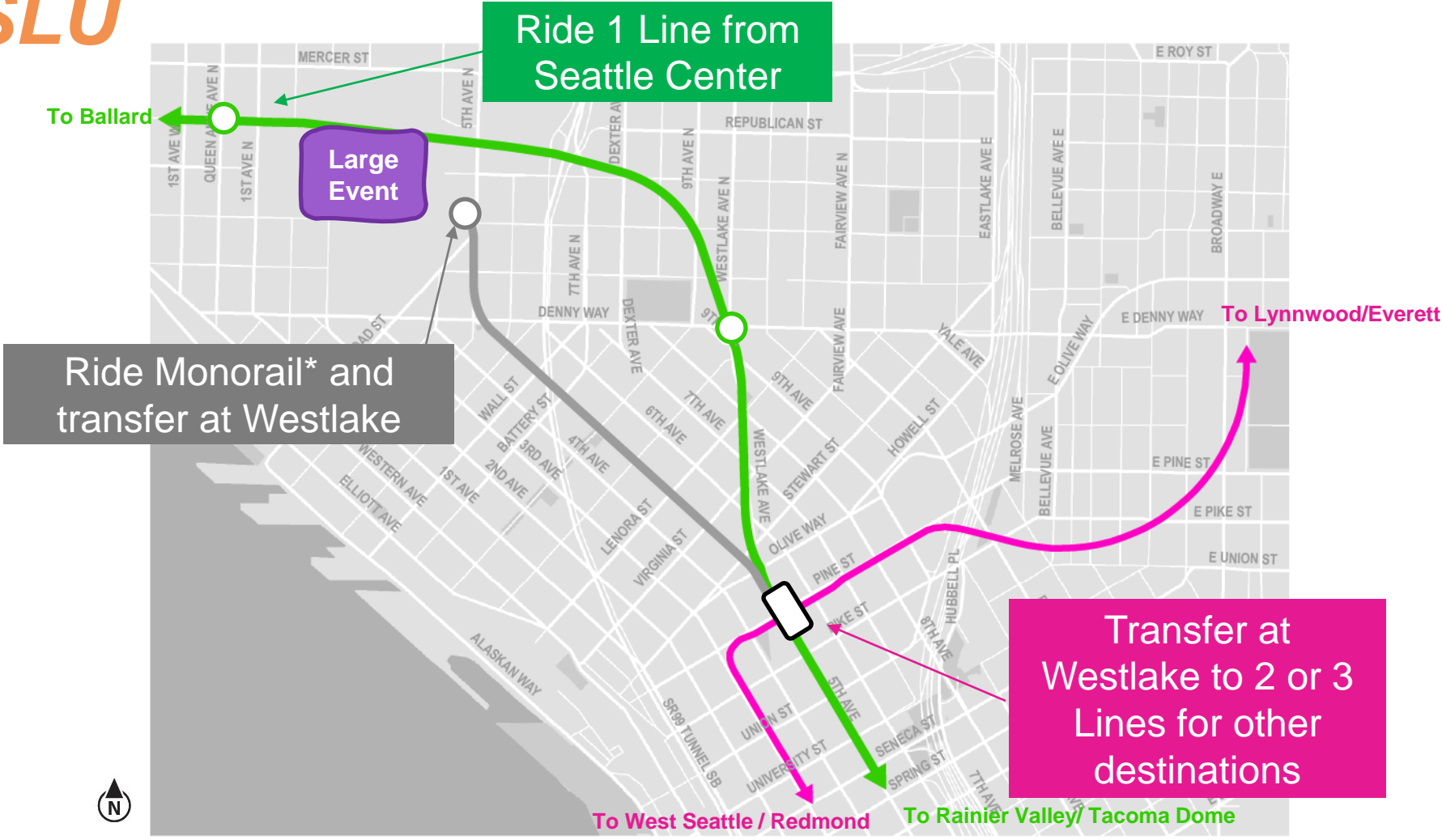
With SLU



*At the time of station opening the monorail will be an 80-year-old system that would likely require major investment to upgrade the system

Seattle Center/ Large Events

Without SLU



*At the time of station opening the monorail will be an 80-year-old system that would likely require major investment to upgrade the system

Three event scenarios:

Climate Pledge Arena



18,300

Memorial Stadium



12,000

Large Festival

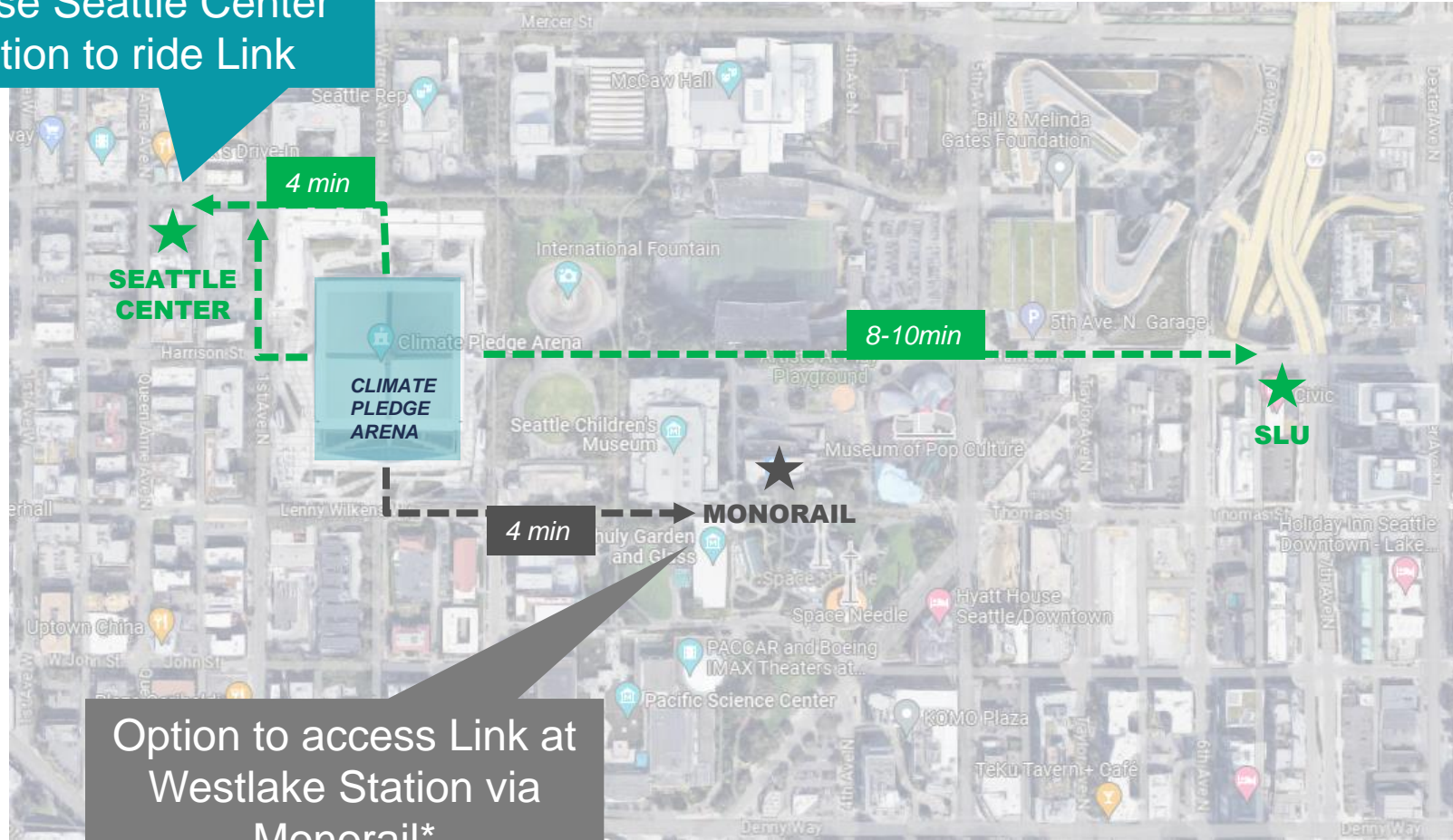


100,000 (per day)



Climate Pledge Arena With SLU

Most riders likely to choose Seattle Center Station to ride Link

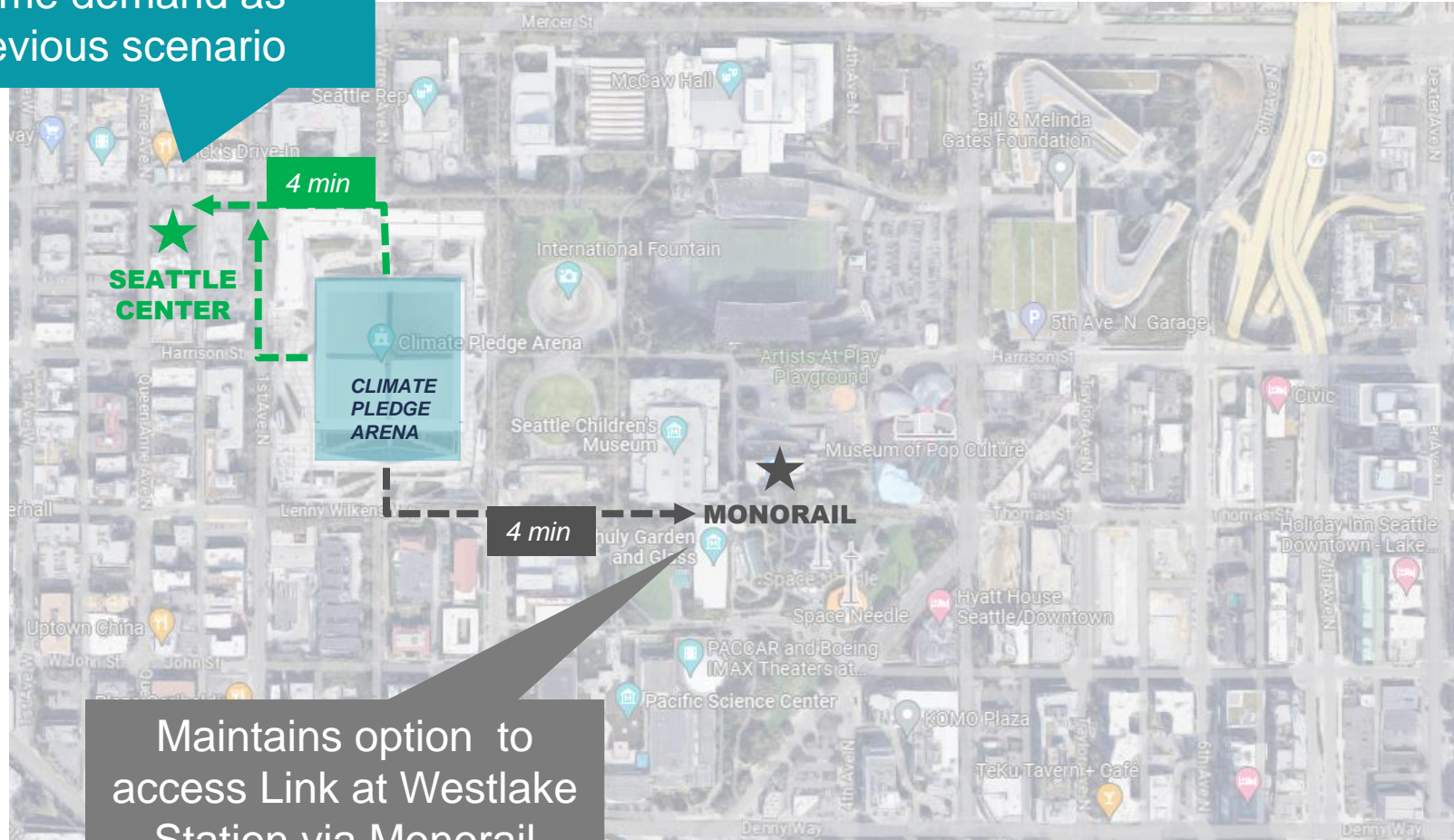


Option to access Link at Westlake Station via Monorail*

Event Venue Capacity: 18,300
Link mode share: 25-30%
Pre/post-event demand:
~4,600 to 5,500

Climate Pledge Arena Without SLU

Same demand as previous scenario



Event Venue Capacity: 18,300

Link mode share: 25-30%

Pre/post-event demand:
~4,600 to 5,500

Maintains option to access Link at Westlake Station via Monorail

Renovated Memorial Stadium *With SLU*

Seattle Center could be preferred to get space on train

Passengers could choose either station to ride Link



Event Venue Capacity: 12,000
Link mode share: 25-30%
Pre/post-event demand: ~3,000 to 3,600

Renovated Memorial Stadium Without SLU

Most riders likely to choose Seattle Center Station to ride Link



Event Venue Capacity: 12,000

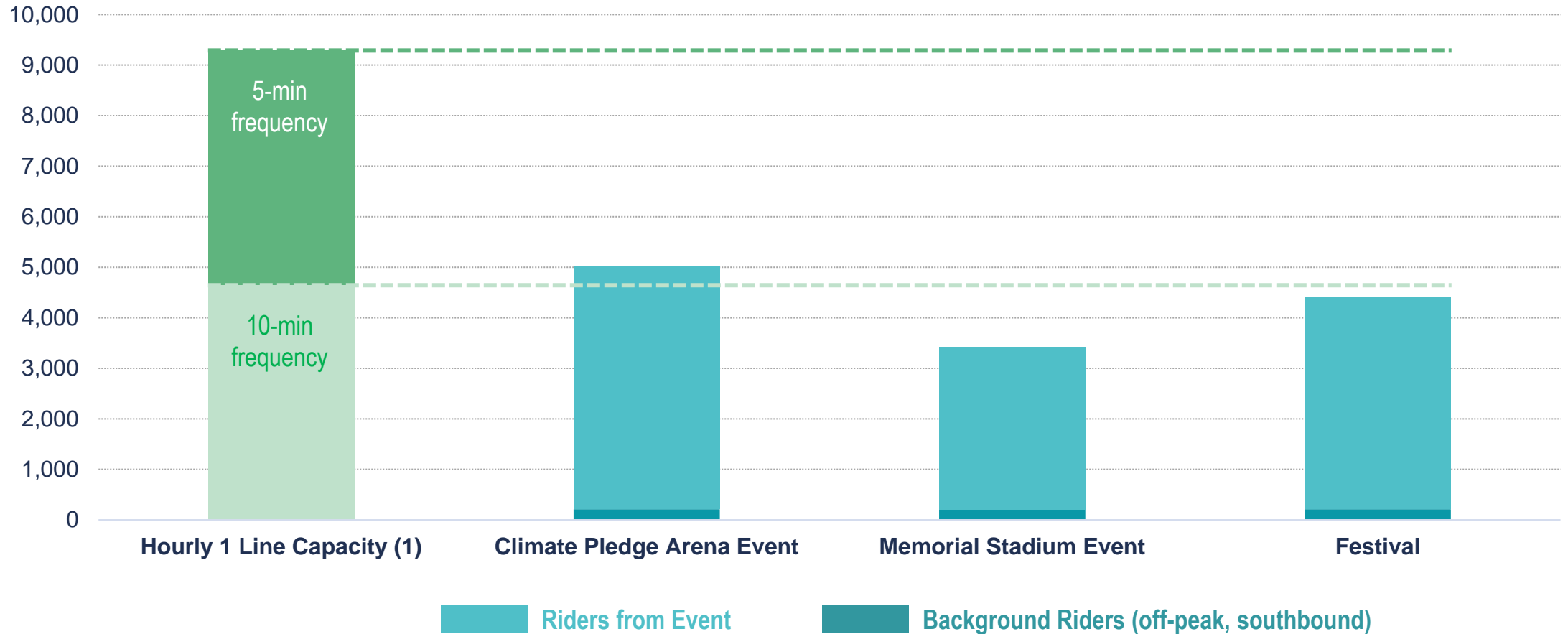
Link mode share: 25-30%

**Pre/post-event demand:
~3,000 to 3,600**

Maintains option to access Link at Westlake Station via Monorail

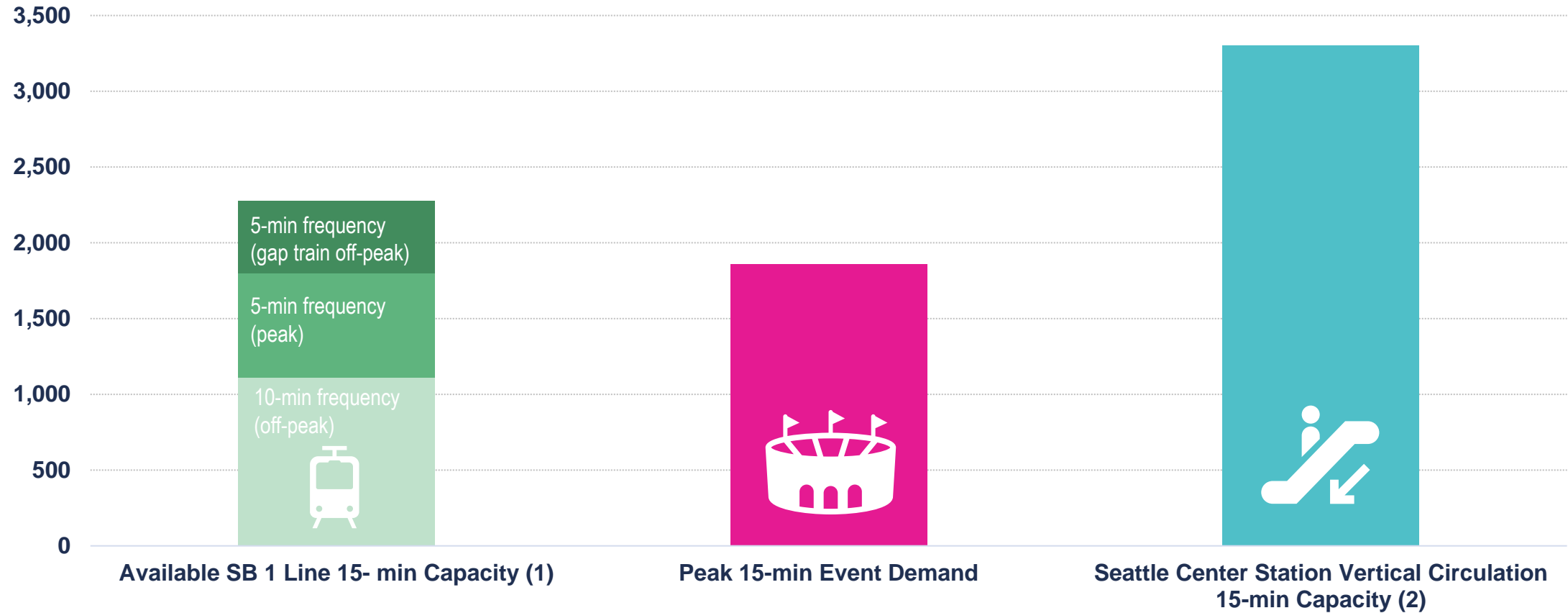
Passenger Surge (Post Event)

Maximum Hourly Demand by Event Type



Passenger Surge (Post Event)

Climate Pledge Arena

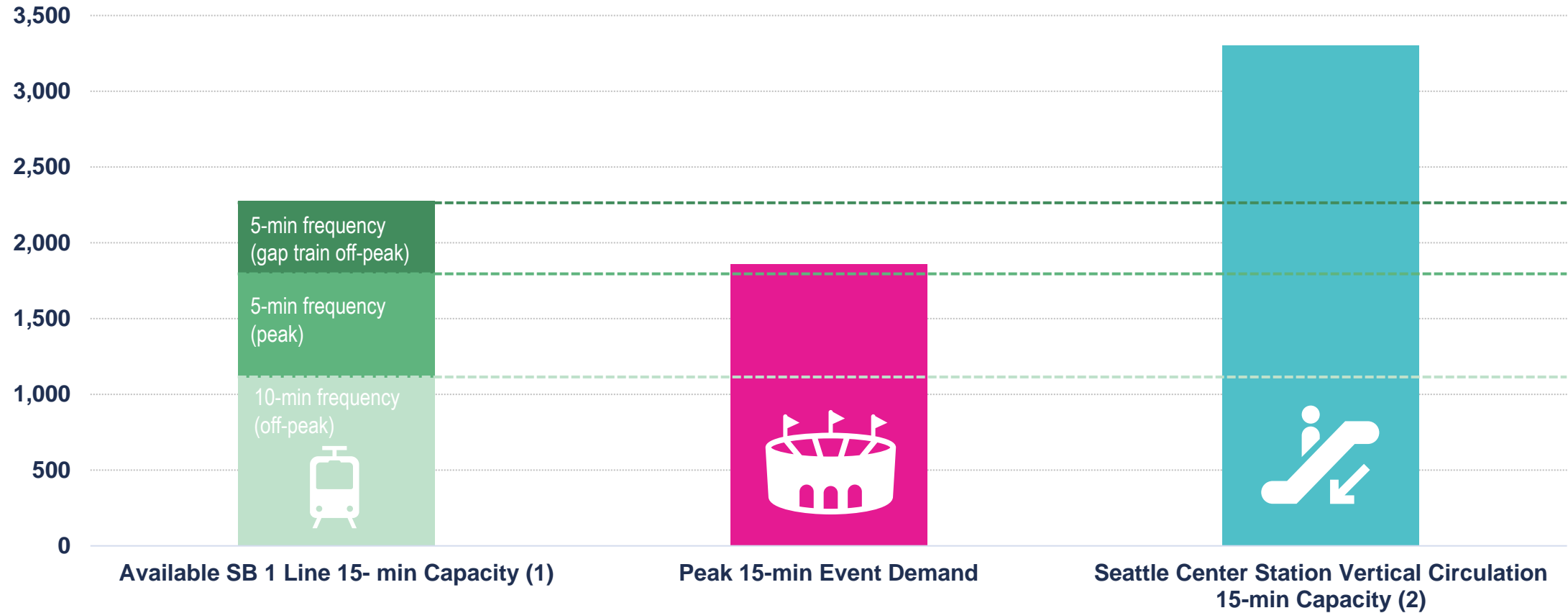


¹ Includes train capacity minus projected 2042 background ridership

² Based on conceptual design in, measured in ingress direction subject to change

Passenger Surge (Post Event)

Climate Pledge Arena



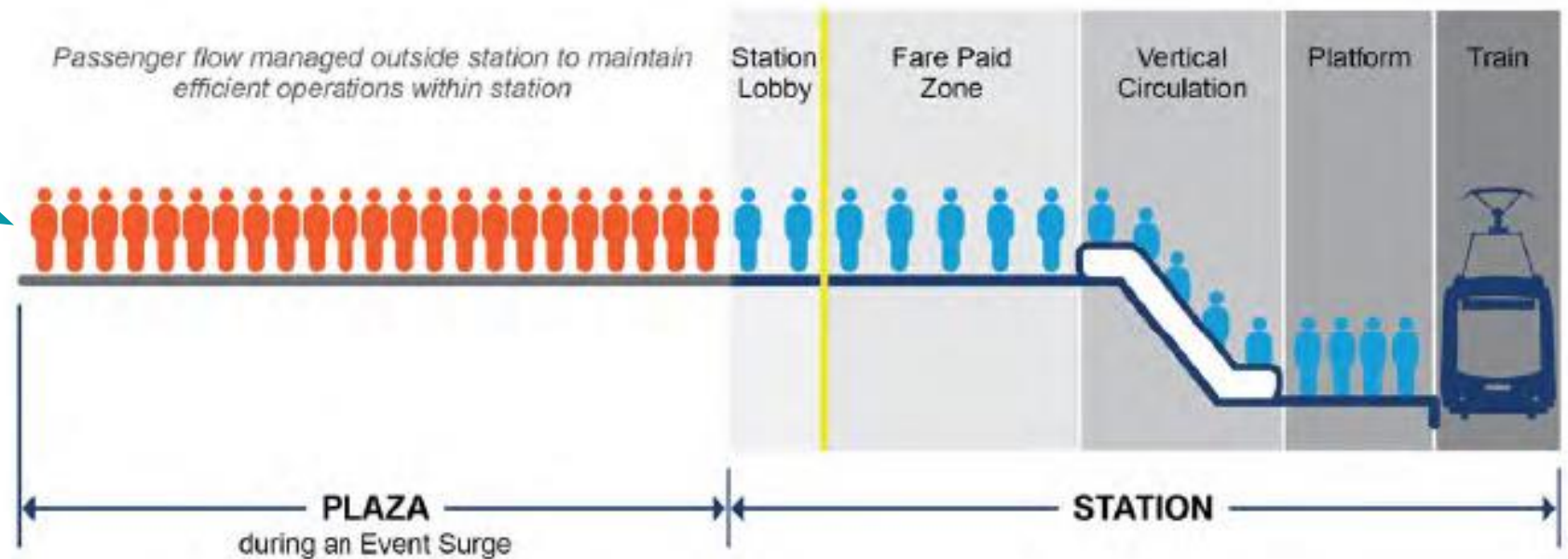
¹ Includes train capacity minus projected 2042 background ridership

² Based on conceptual design in, measured in ingress direction subject to change

Passenger Surge (Post Event)

If the anticipated passenger surge volume exceeds the capacity of the Link light rail system, Sound Transit will plan and deploy passenger flow management strategies at stations.¹

Metering occurs at venue, pathway to station, and at station entrance (if needed)



**For frequency of events at Seattle Center, passenger flow management would need to be in place through agreement with City, Climate Pledge, and other partners*

Seattle Center/Large Events

- *Link capacity based on train frequency and loads, irrespective of number/location of entrances*
- *Entrances provide additional locations to access Link*
- *Station design matches capacity of boarding/deboarding passengers with line capacity*
- *Pre-event Link demand capped at line capacity*
- *Post-event Link passenger flow managed between event venue and station if demand exceeds line capacity*

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Next steps

- Engagement on assessment results
 - Share feedback with us today
 - Webinars on July 20, 12-1pm and July 25, 5:30-6:30pm (<https://wsblink.participate.online/>)
 - Email wsblink@soundtransit.org or leave a voicemail on the project line: 206-903-7229
- Return to the Board with a status report and potential board action on July 27

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 *wsblink.participate.online*
206-903-7229

 **SOUNDTRANSIT**

